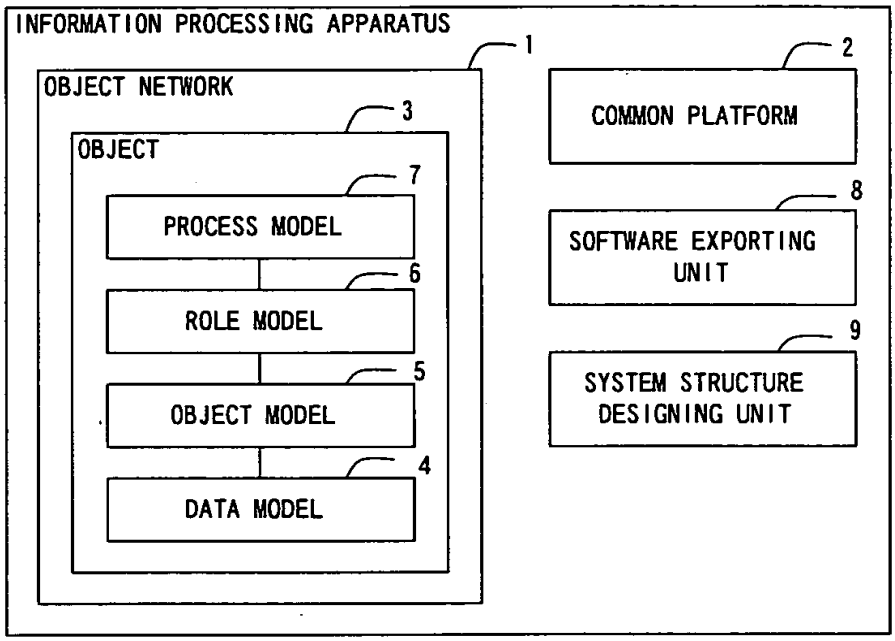
INFORMATION PROCESSING APPARATUS
1
OBJECT NETWORK
3
OBJECT
7
PROCESS MODEL
6
ROLE MODEL
5
OBJECT MODEL
4
DATA MODEL
2
COMMON PLATFORM
8
SOFTWARE EXPORTING UNIT
9
SYSTEM STRUCTURE DESIGNING UNIT

FIG. 1

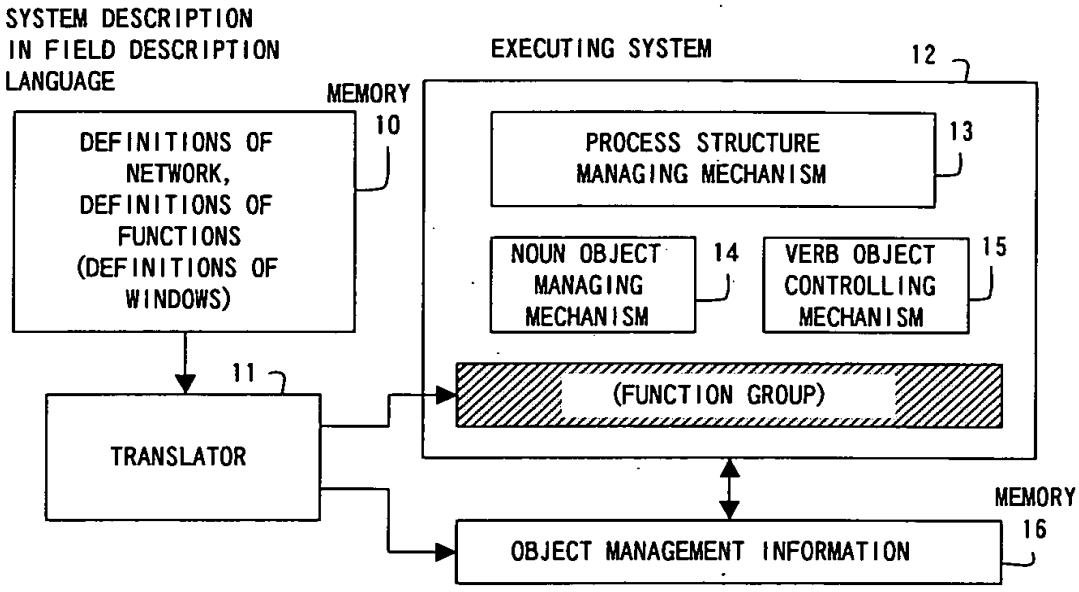
SYSTEM DESCRIPTION IN FIELD DESCRIPTION LANGUAGE
MEMORY
10
DEFINITIONS OF NETWORK, DEFINITIONS OF FUNCTIONS (DEFINITIONS OF WINDOWS)
11
TRANSLATOR
EXECUTING SYSTEM
12
PROCESS STRUCTURE MANAGING MECHANISM
13
NOUN OBJECT MANAGING MECHANISM
14
VERB OBJECT CONTROLLING MECHANISM
15
(FUNCTION GROUP)
MEMORY
16
OBJECT MANAGEMENT INFORMATION

FIG. 2

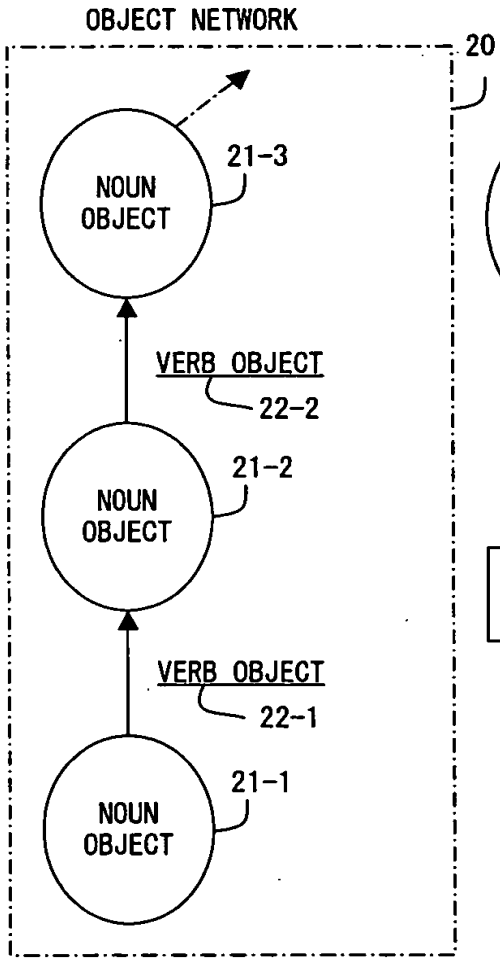

FIG. 3A

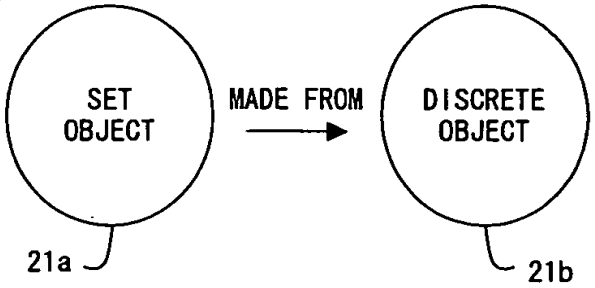

FIG. 3B

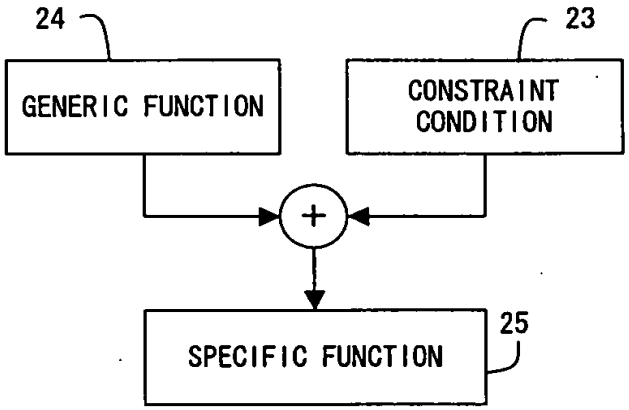

FIG. 3C

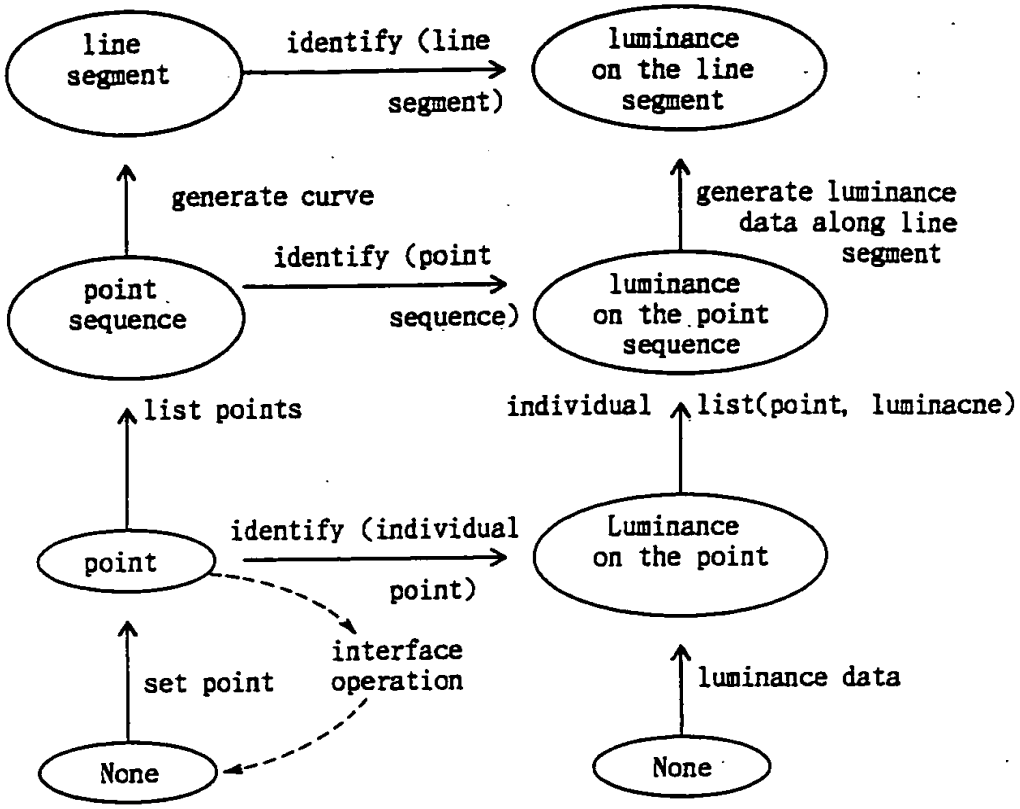
line segment
identify (line segment)
luminance on the line segment
generate curve
generate luminance data along line segment
point sequence
identify (point sequence)
luminance on the point sequence
list points
individual
list(point, luminacne)
point
identify (individual point)
Luminance on the point
interface operation
set point
luminance data
None
None

FIG. 4A

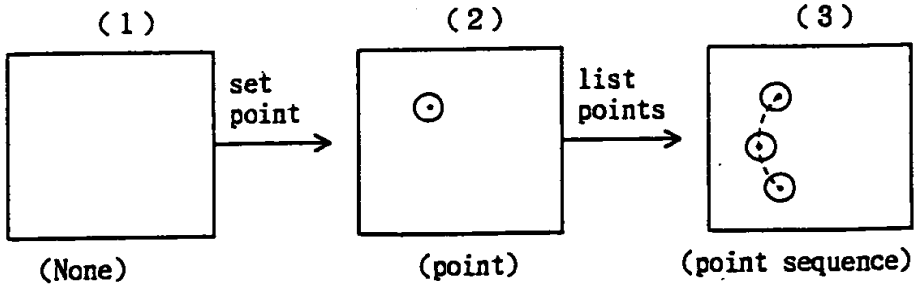
(1)
(2)
(3)
set point
list points
(None)
(point)
(point sequence)

FIG. 4B

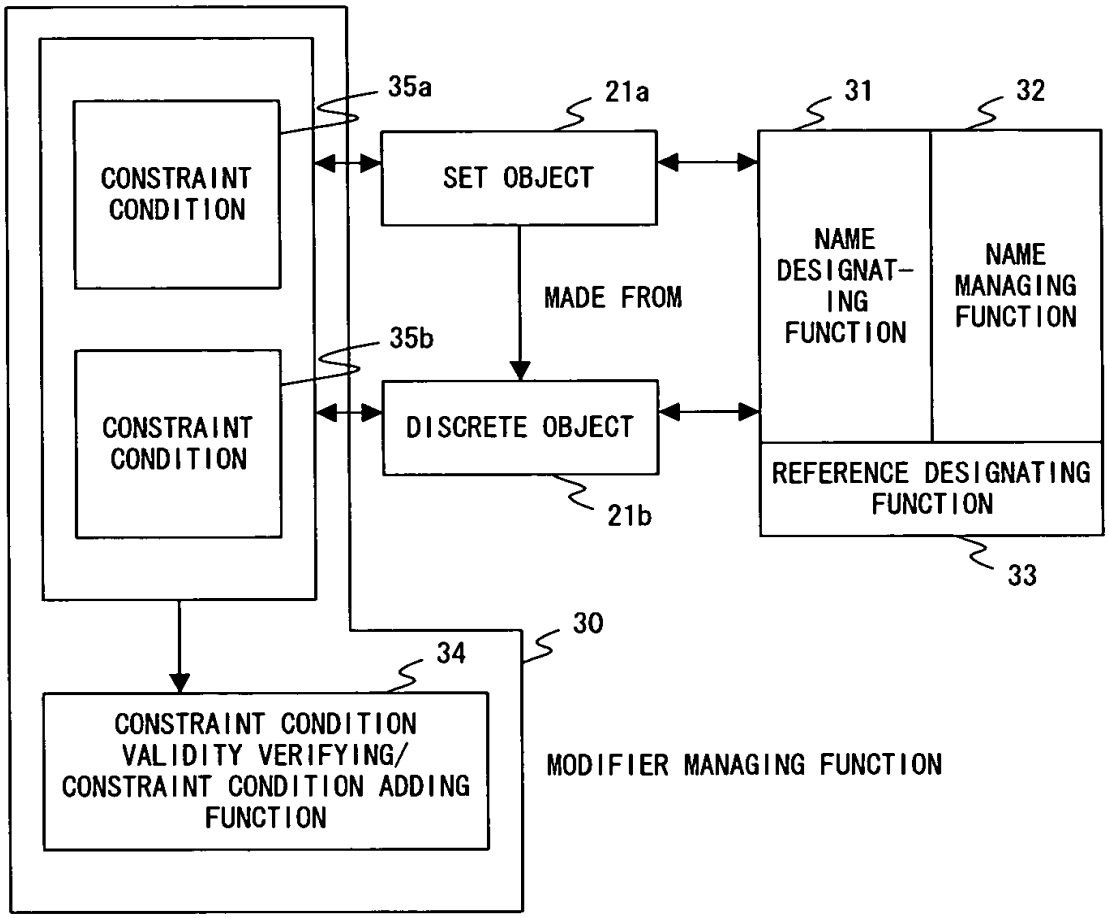
35a
21a
31
32
CONSTRAINT CONDITION
SET OBJECT
NAME DESIGNAT-ING FUNCTION
NAME MANAGING FUNCTION
MADE FROM
35b
CONSTRAINT CONDITION
DISCRETE OBJECT
REFERENCE DESIGNATING FUNCTION
21b
33
30
34
CONSTRAINT CONDITION VALIDITY VERIFYING/ CONSTRAINT CONDITION ADDING FUNCTION
MODIFIER MANAGING FUNCTION

FIG. 5

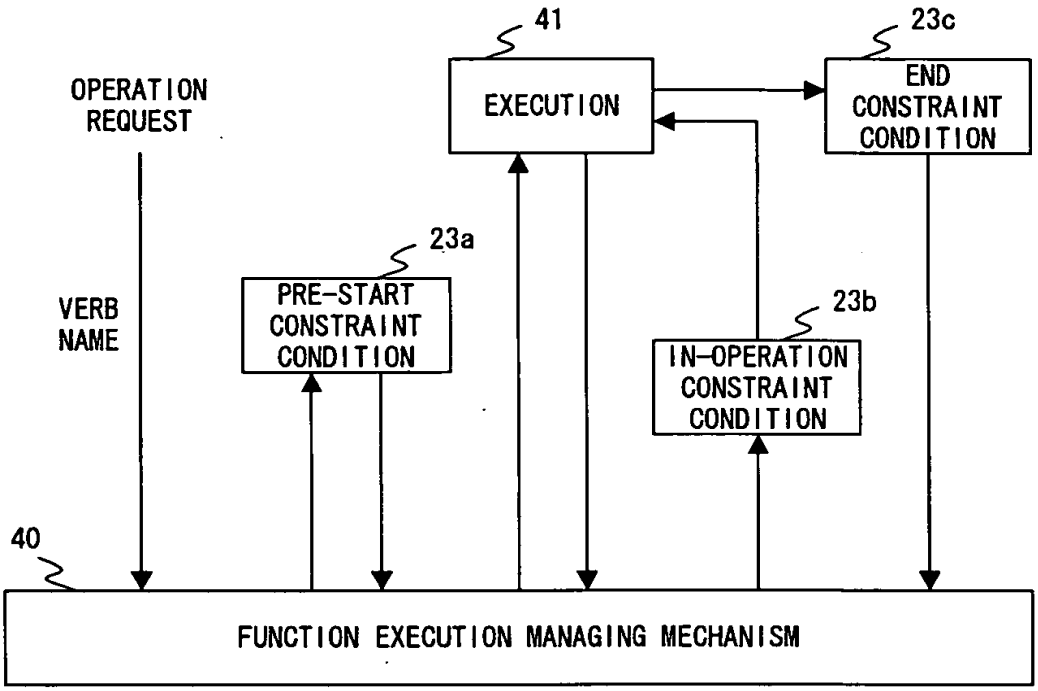
41
23c
OPERATION REQUEST
EXECUTION
END CONSTRAINT CONDITION
23a
VERB NAME
PRE-START CONSTRAINT CONDITION
23b
IN-OPERATION CONSTRAINT CONDITION
40
FUNCTION EXECUTION MANAGING MECHANISM

FIG. 6

PATENT APPLICATION

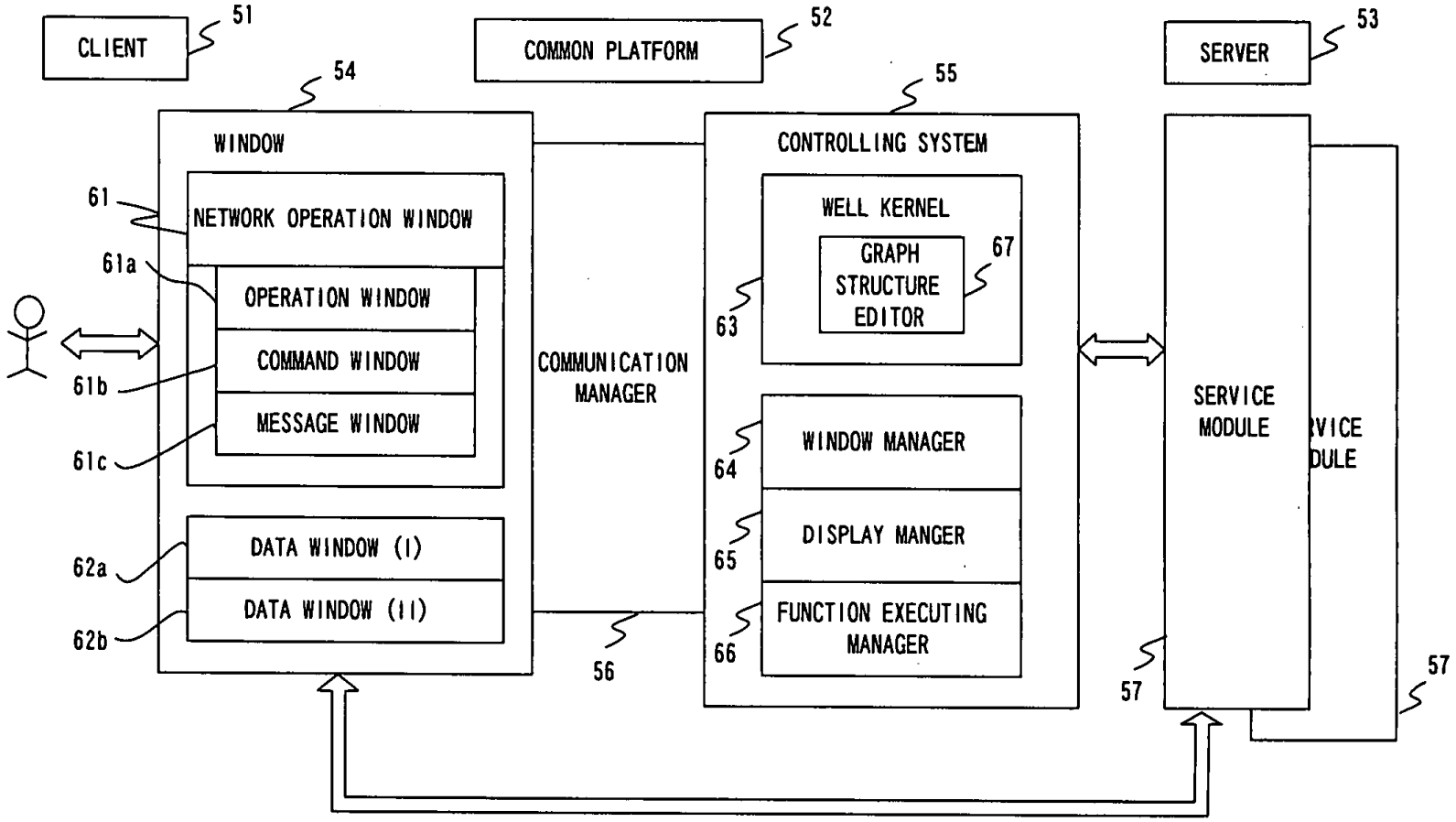

FIG. 7

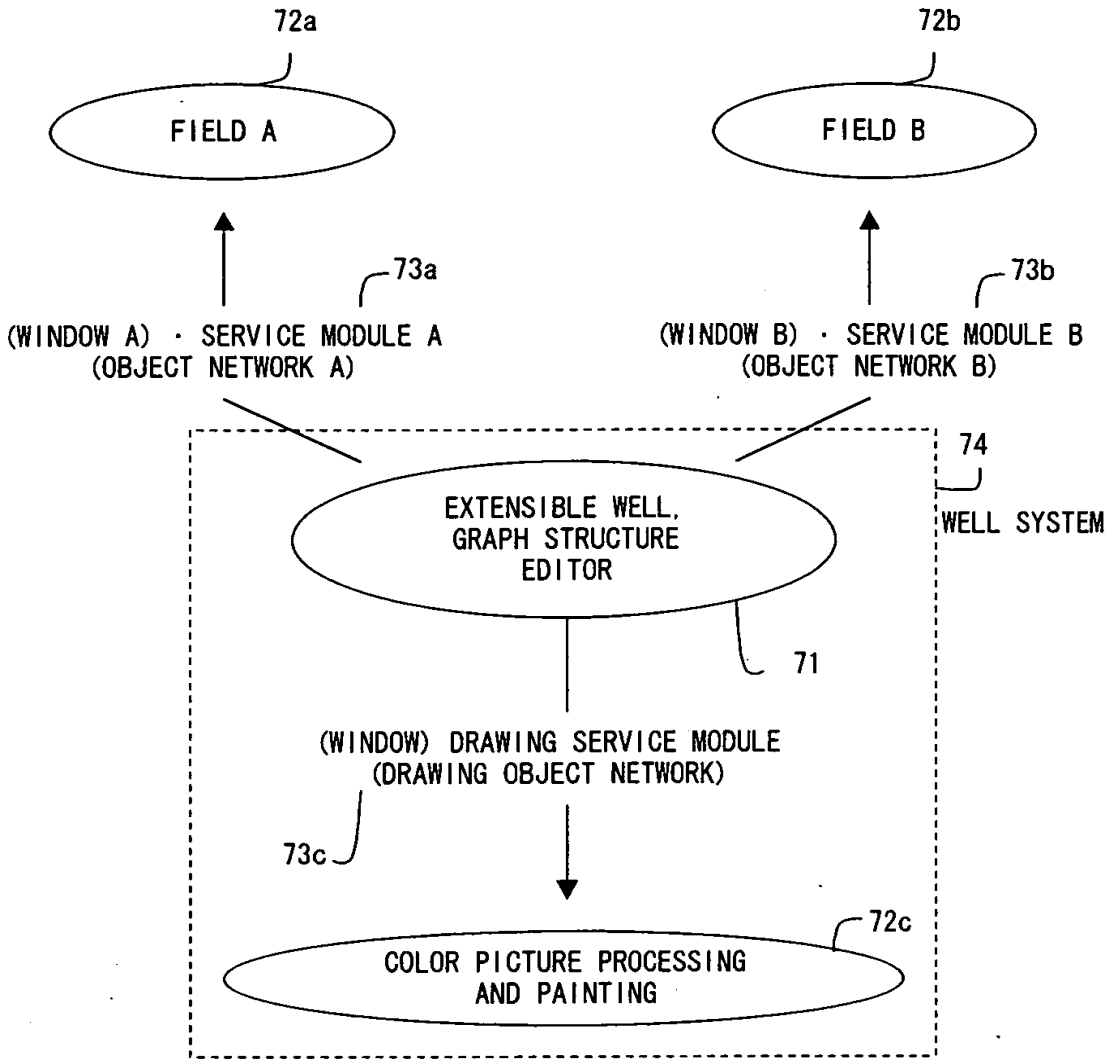
72a
72b
FIELD A
FIELD B
73a
73b
(WINDOW A) · SERVICE MODULE A
(OBJECT NETWORK A)
(WINDOW B) · SERVICE MODULE B
(OBJECT NETWORK B)
74
WELL SYSTEM
EXTENSIBLE WELL,
GRAPH STRUCTURE
EDITOR
71
(WINDOW) DRAWING SERVICE MODULE
(DRAWING OBJECT NETWORK)
73c
72c
COLOR PICTURE PROCESSING
AND PAINTING

FIG. 8

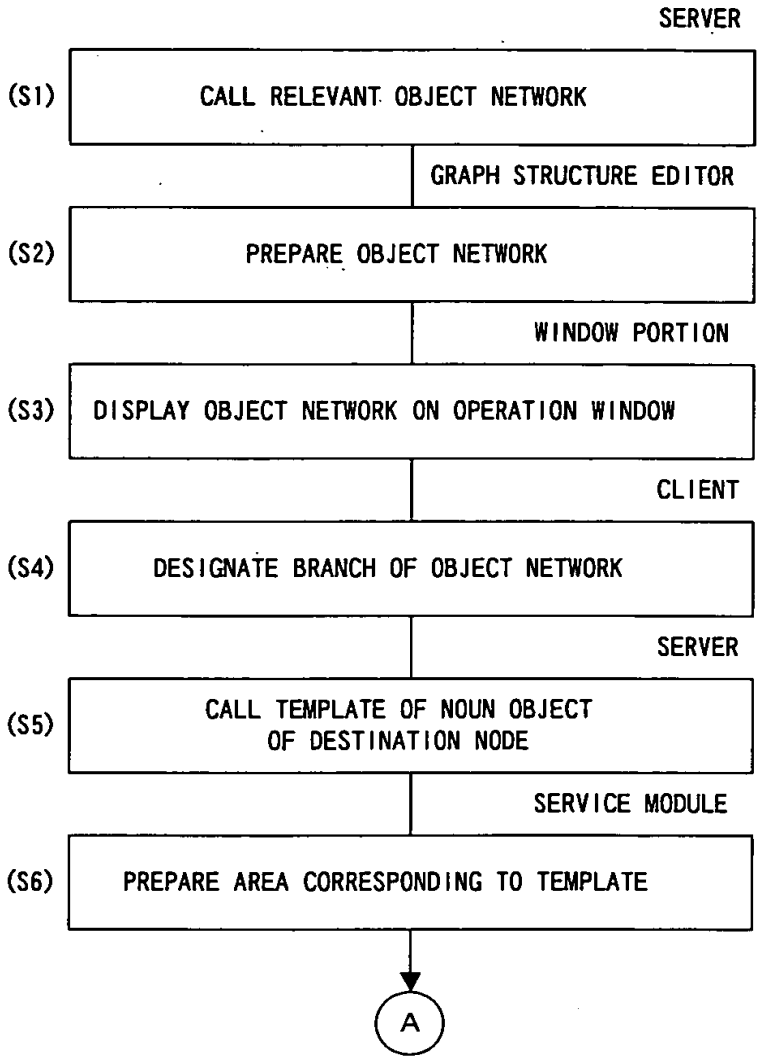
SERVER
(S1)
CALL RELEVANT OBJECT NETWORK
GRAPH STRUCTURE EDITOR
(S2)
PREPARE OBJECT NETWORK
WINDOW PORTION
(S3)
DISPLAY OBJECT NETWORK ON OPERATION WINDOW
CLIENT
(S4)
DESIGNATE BRANCH OF OBJECT NETWORK
SERVER
(S5)
CALL TEMPLATE OF NOUN OBJECT OF DESTINATION NODE
SERVICE MODULE
(S6)
PREPARE AREA CORRESPONDING TO TEMPLATE
A

FIG. 9

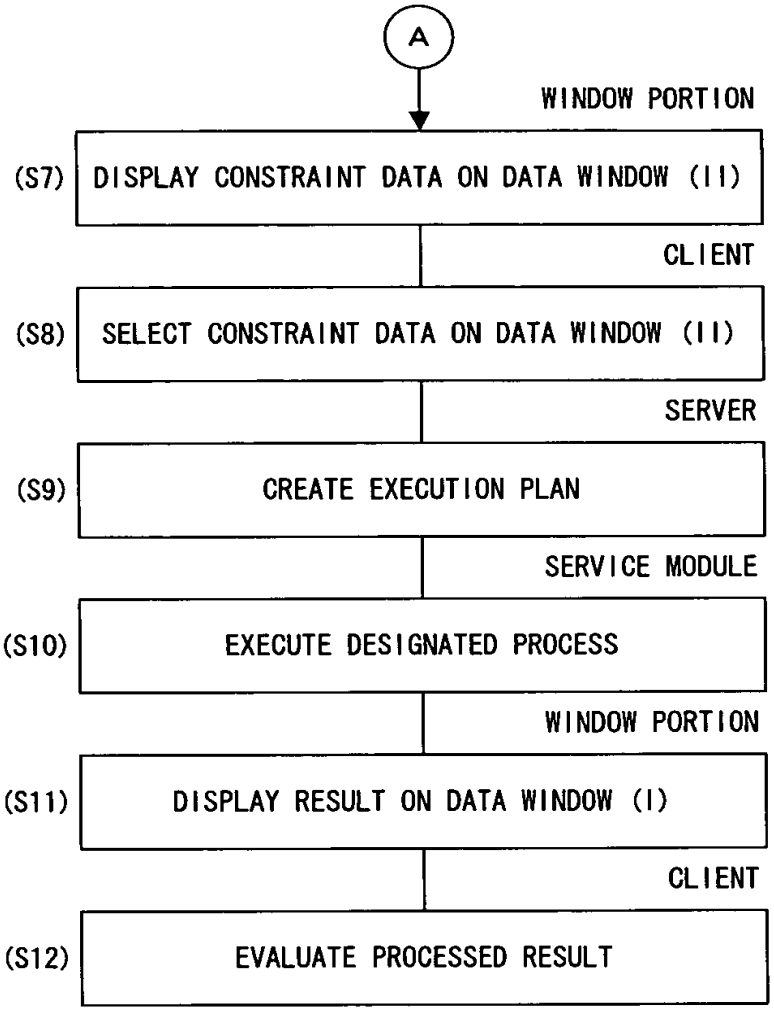
A
WINDOW PORTION
(S7)
DISPLAY CONSTRAINT DATA ON DATA WINDOW (II)
CLIENT
(S8)
SELECT CONSTRAINT DATA ON DATA WINDOW (II)
SERVER
(S9)
CREATE EXECUTION PLAN
SERVICE MODULE
(S10)
EXECUTE DESIGNATED PROCESS
WINDOW PORTION
(S11)
DISPLAY RESULT ON DATA WINDOW (I)
CLIENT
(S12)
EVALUATE PROCESSED RESULT

FIG. 10

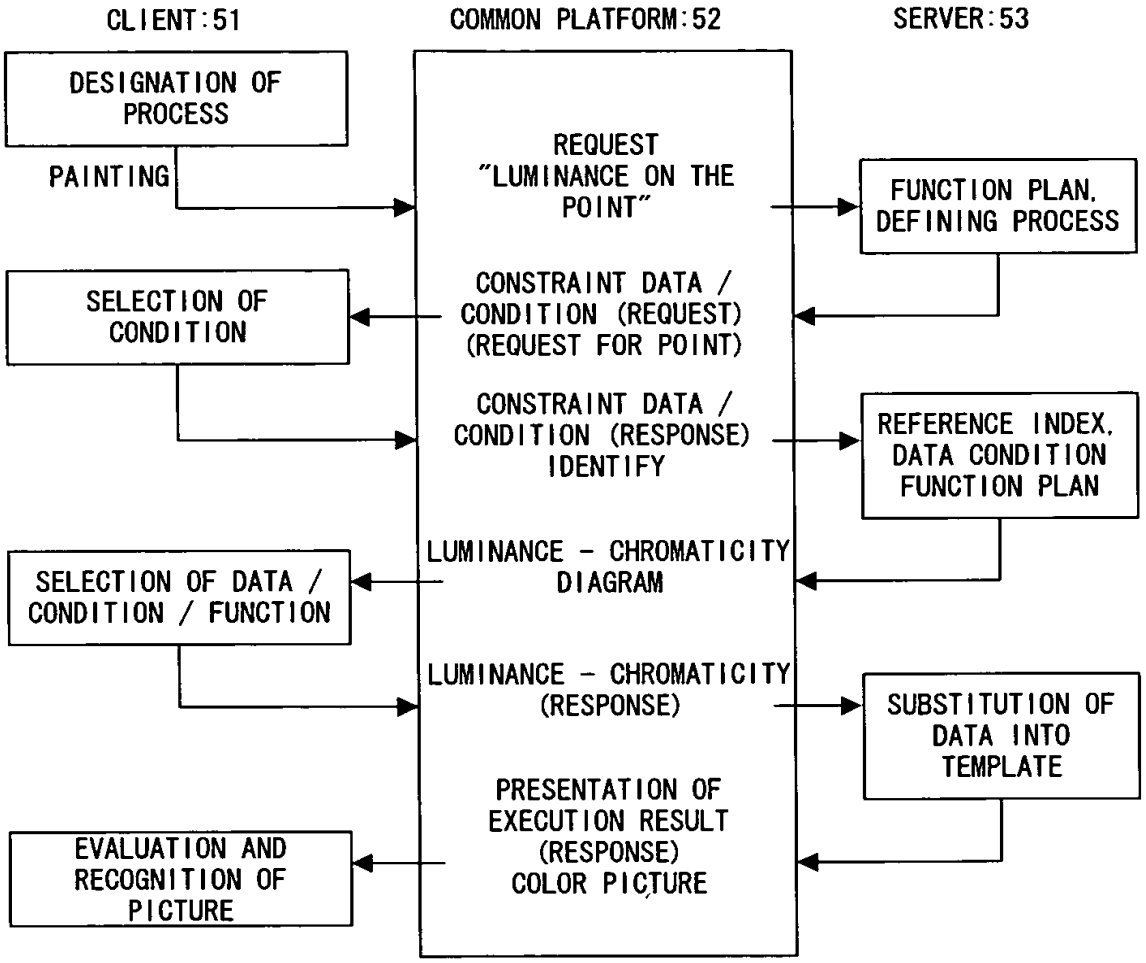
CLIENT:51
COMMON PLATFORM:52
SERVER:53
DESIGNATION OF PROCESS
PAINTING
REQUEST "LUMINANCE ON THE POINT"
FUNCTION PLAN, DEFINING PROCESS
SELECTION OF CONDITION
CONSTRAINT DATA / CONDITION (REQUEST) (REQUEST FOR POINT)
CONSTRAINT DATA / CONDITION (RESPONSE) IDENTIFY
REFERENCE INDEX, DATA CONDITION FUNCTION PLAN
SELECTION OF DATA / CONDITION / FUNCTION
LUMINANCE - CHROMATICITY DIAGRAM
LUMINANCE - CHROMATICITY (RESPONSE)
SUBSTITUTION OF DATA INTO TEMPLATE
EVALUATION AND RECOGNITION OF PICTURE
PRESENTATION OF EXECUTION RESULT (RESPONSE) COLOR PICTURE

FIG. 11

index	X	Y	attributes for Point(X, Y)

FIG. 12

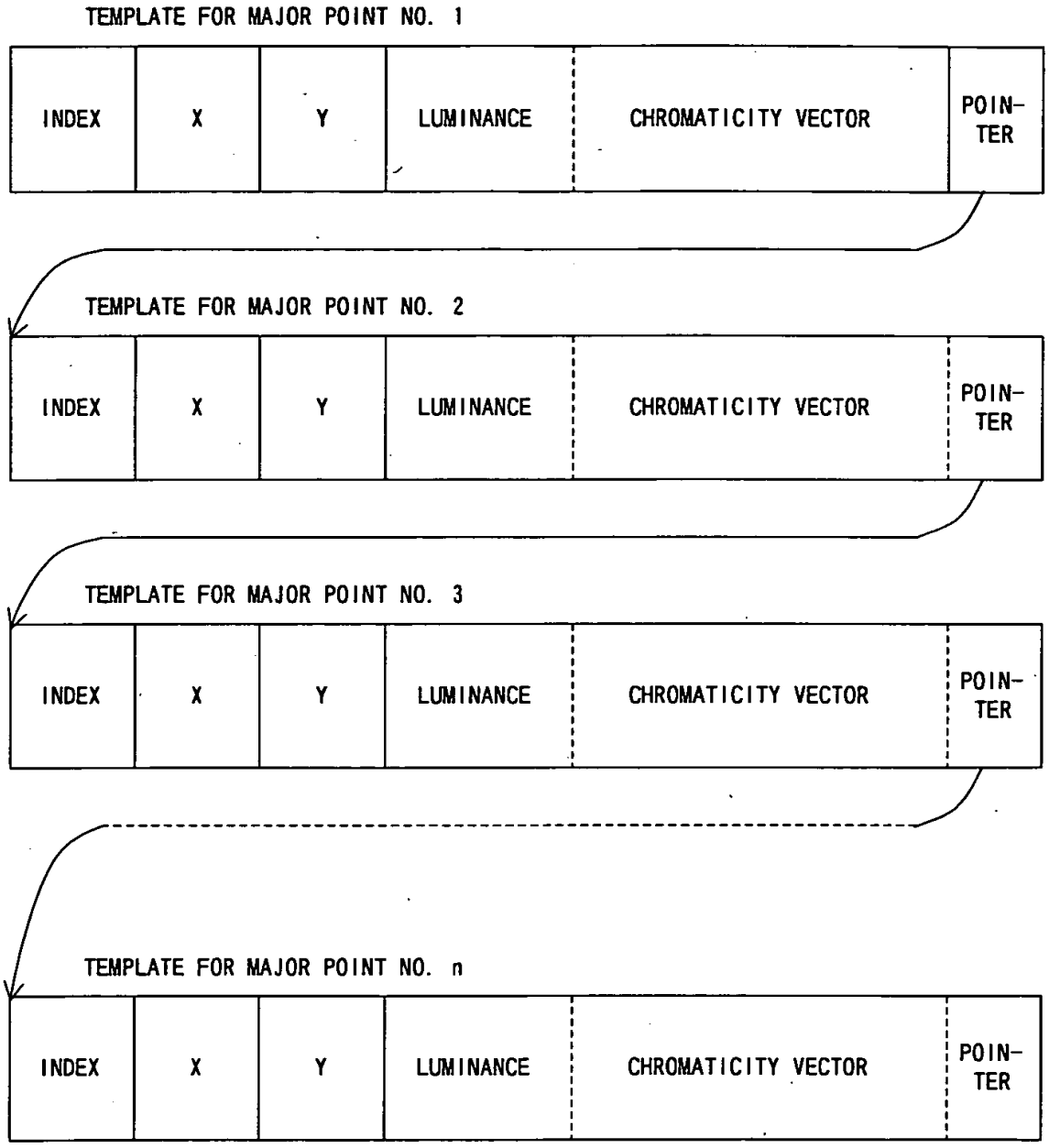
TEMPLATE FOR MAJOR POINT NO. 1
INDEX
X
Y
LUMINANCE
CHROMATICITY VECTOR
POIN-TER
TEMPLATE FOR MAJOR POINT NO. 2
INDEX
X
Y
LUMINANCE
CHROMATICITY VECTOR
POIN-TER
TEMPLATE FOR MAJOR POINT NO. 3
INDEX
X
Y
LUMINANCE
CHROMATICITY VECTOR
POIN-TER
TEMPLATE FOR MAJOR POINT NO. n
INDEX
X
Y
LUMINANCE
CHROMATICITY VECTOR
POIN-TER

FIG. 13

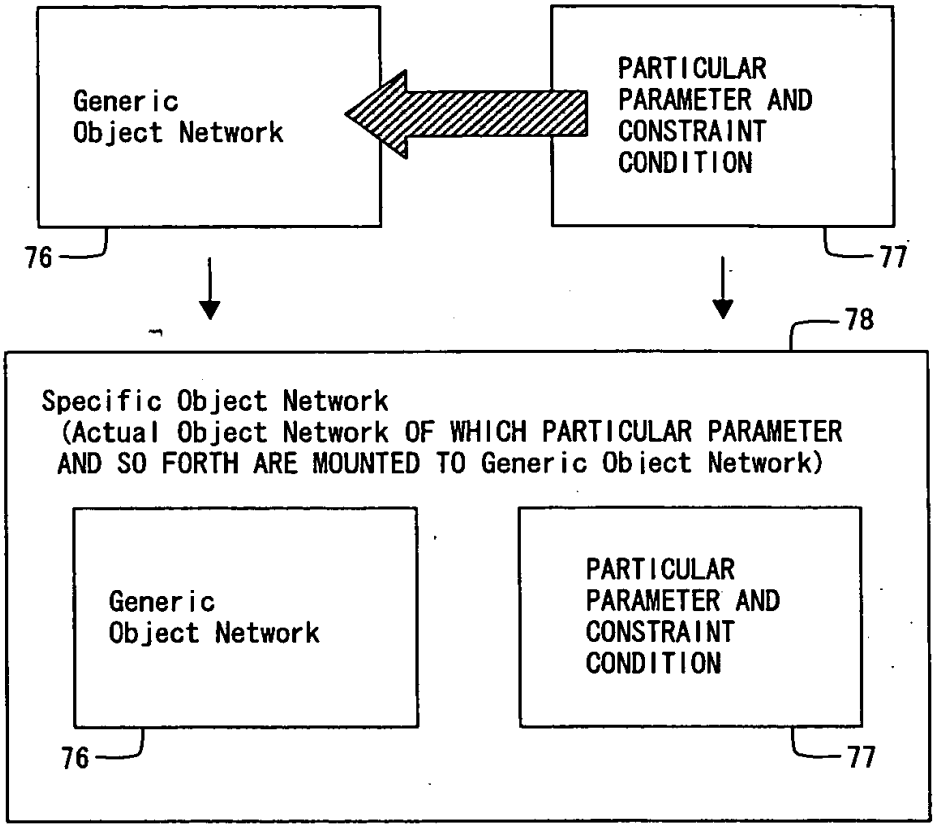
Generic
Object Network
PARTICULAR
PARAMETER AND
CONSTRAINT
CONDITION
76
77
78
Specific Object Network
(Actual Object Network OF WHICH PARTICULAR PARAMETER
AND SO FORTH ARE MOUNTED TO Generic Object Network)
Generic
Object Network
PARTICULAR
PARAMETER AND
CONSTRAINT
CONDITION
76
77

FIG. 14

PCT/JP2003/016068

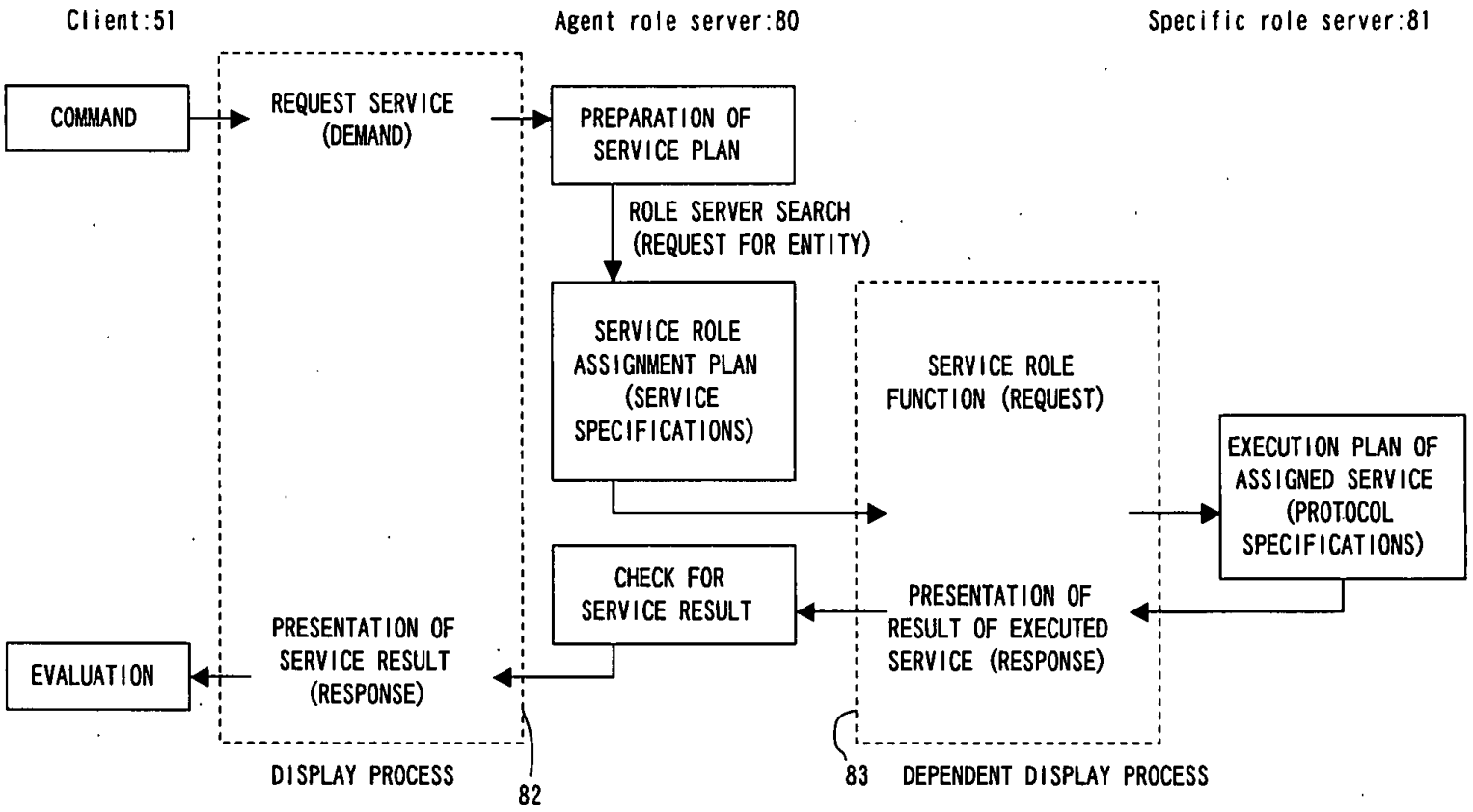

FIG. 15

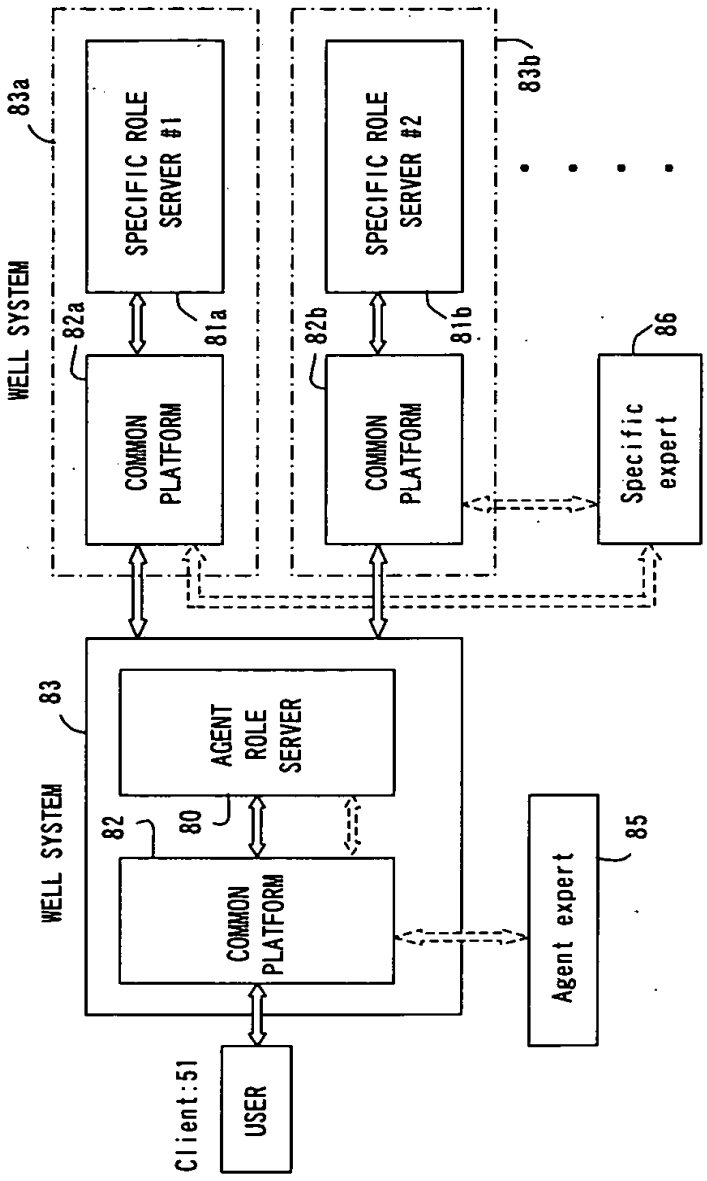
WELL SYSTEM
83a
SPECIFIC ROLE SERVER #1
SPECIFIC ROLE SERVER #2
83b
82a
81a
82b
81b
86
COMMON PLATFORM
COMMON PLATFORM
Specific expert
83
AGENT ROLE SERVER
WELL SYSTEM
82
80
COMMON PLATFORM
85
Agent expert
Client:51
USER

FIG. 16

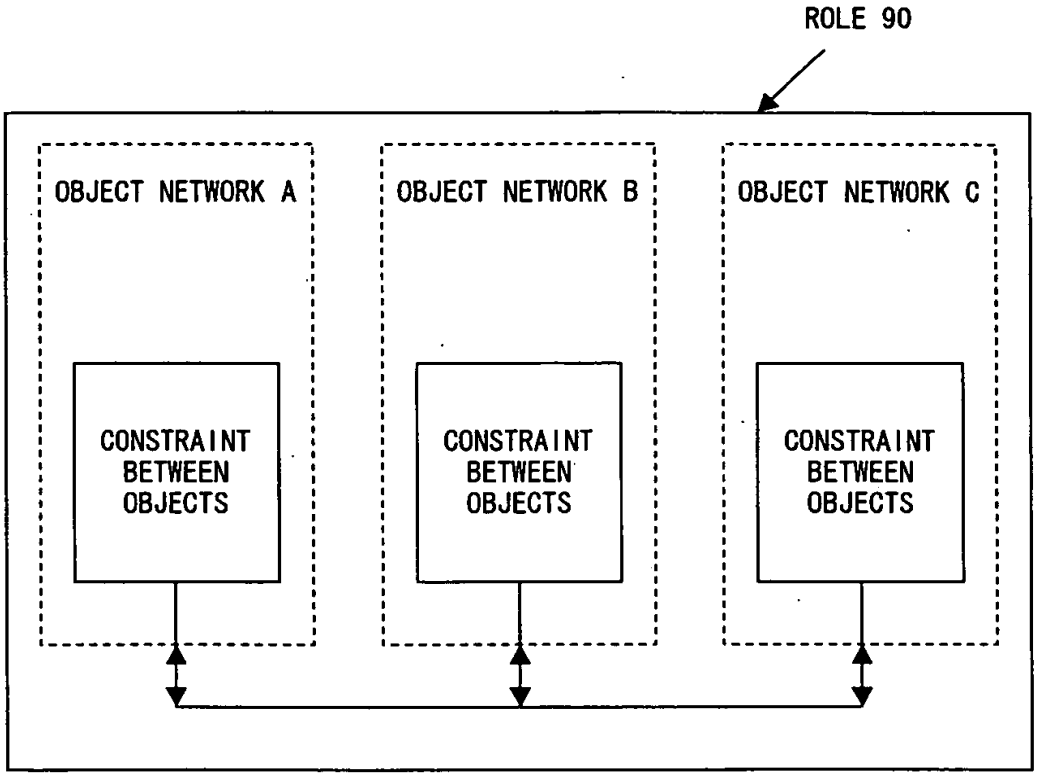
ROLE 90
OBJECT NETWORK A
OBJECT NETWORK B
OBJECT NETWORK C
CONSTRAINT BETWEEN OBJECTS
CONSTRAINT BETWEEN OBJECTS
CONSTRAINT BETWEEN OBJECTS

FIG. 17

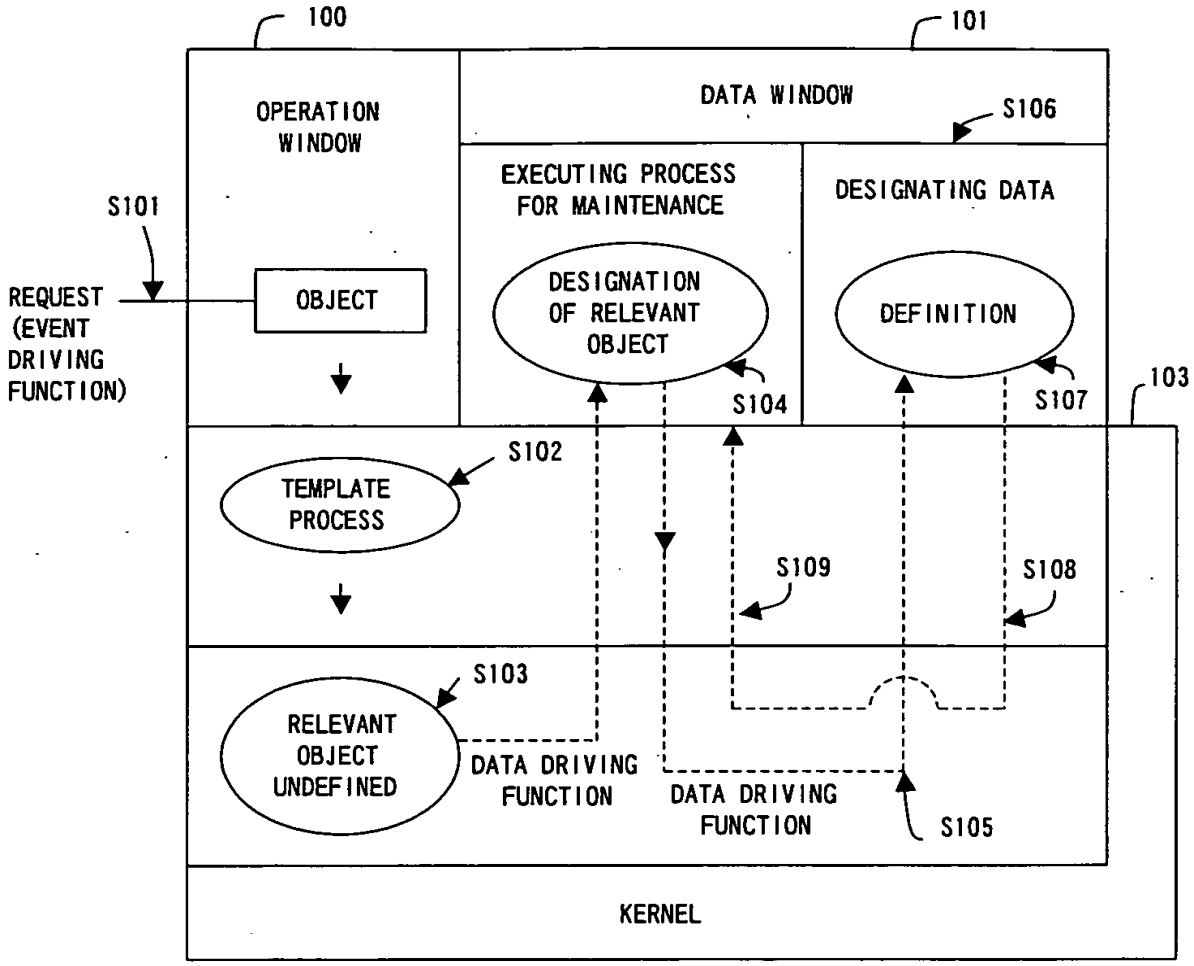
100
101
OPERATION WINDOW
DATA WINDOW
S106
EXECUTING PROCESS FOR MAINTENANCE
DESIGNATING DATA
S101
REQUEST (EVENT DRIVING FUNCTION)
OBJECT
DESIGNATION OF RELEVANT OBJECT
DEFINITION
S104
S107
103
S102
TEMPLATE PROCESS
S109
S108
S103
RELEVANT OBJECT UNDEFINED
DATA DRIVING FUNCTION
DATA DRIVING FUNCTION
S105
KERNEL

FIG. 18

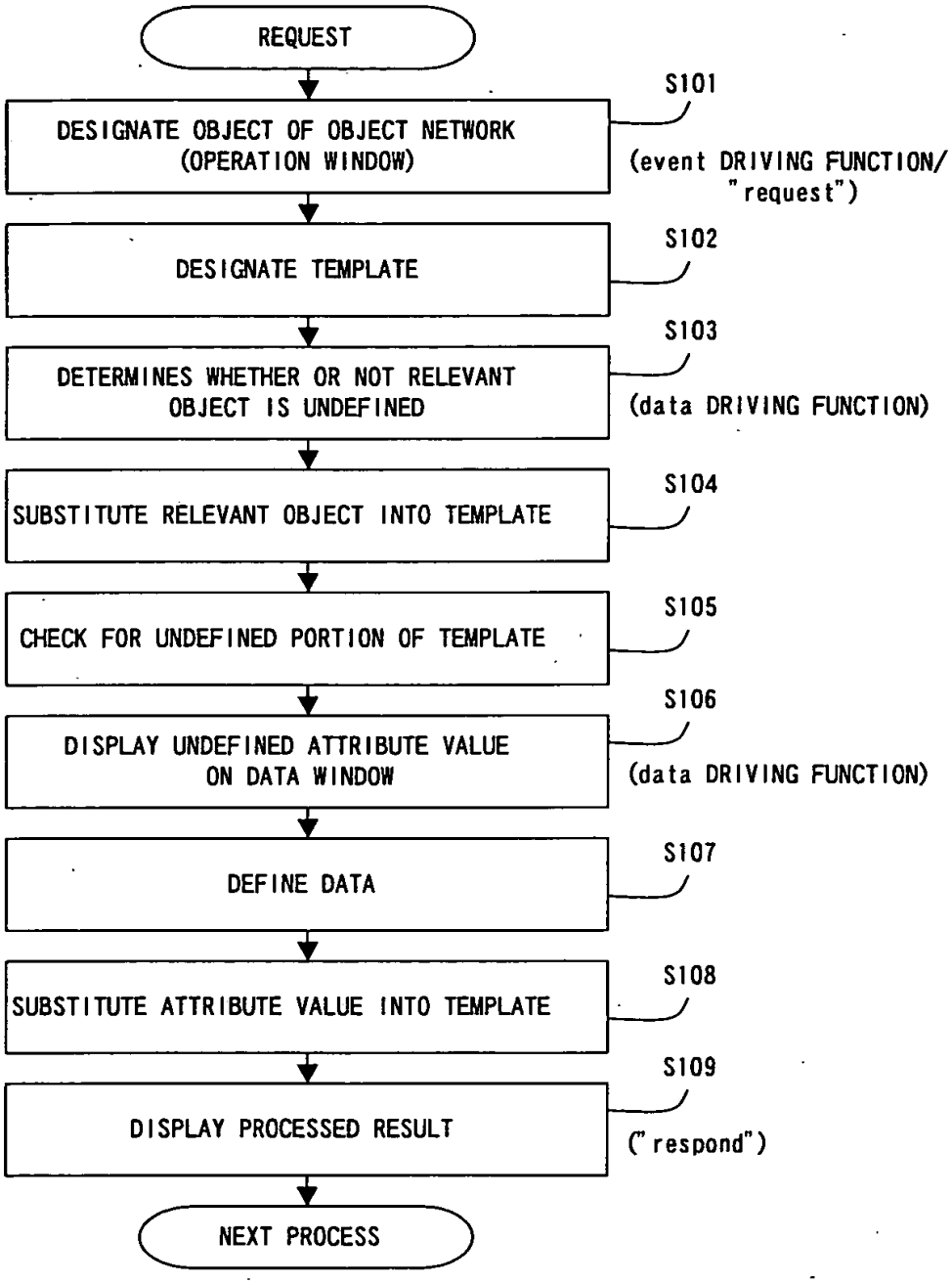
REQUEST
S101
DESIGNATE OBJECT OF OBJECT NETWORK (OPERATION WINDOW)
(event DRIVING FUNCTION/ "request")
S102
DESIGNATE TEMPLATE
S103
DETERMINES WHETHER OR NOT RELEVANT OBJECT IS UNDEFINED
(data DRIVING FUNCTION)
S104
SUBSTITUTE RELEVANT OBJECT INTO TEMPLATE
S105
CHECK FOR UNDEFINED PORTION OF TEMPLATE
S106
DISPLAY UNDEFINED ATTRIBUTE VALUE ON DATA WINDOW
(data DRIVING FUNCTION)
S107
DEFINE DATA
S108
SUBSTITUTE ATTRIBUTE VALUE INTO TEMPLATE
S109
DISPLAY PROCESSED RESULT
("respond")
NEXT PROCESS

FIG. 19

PRINTED IN JAPAN

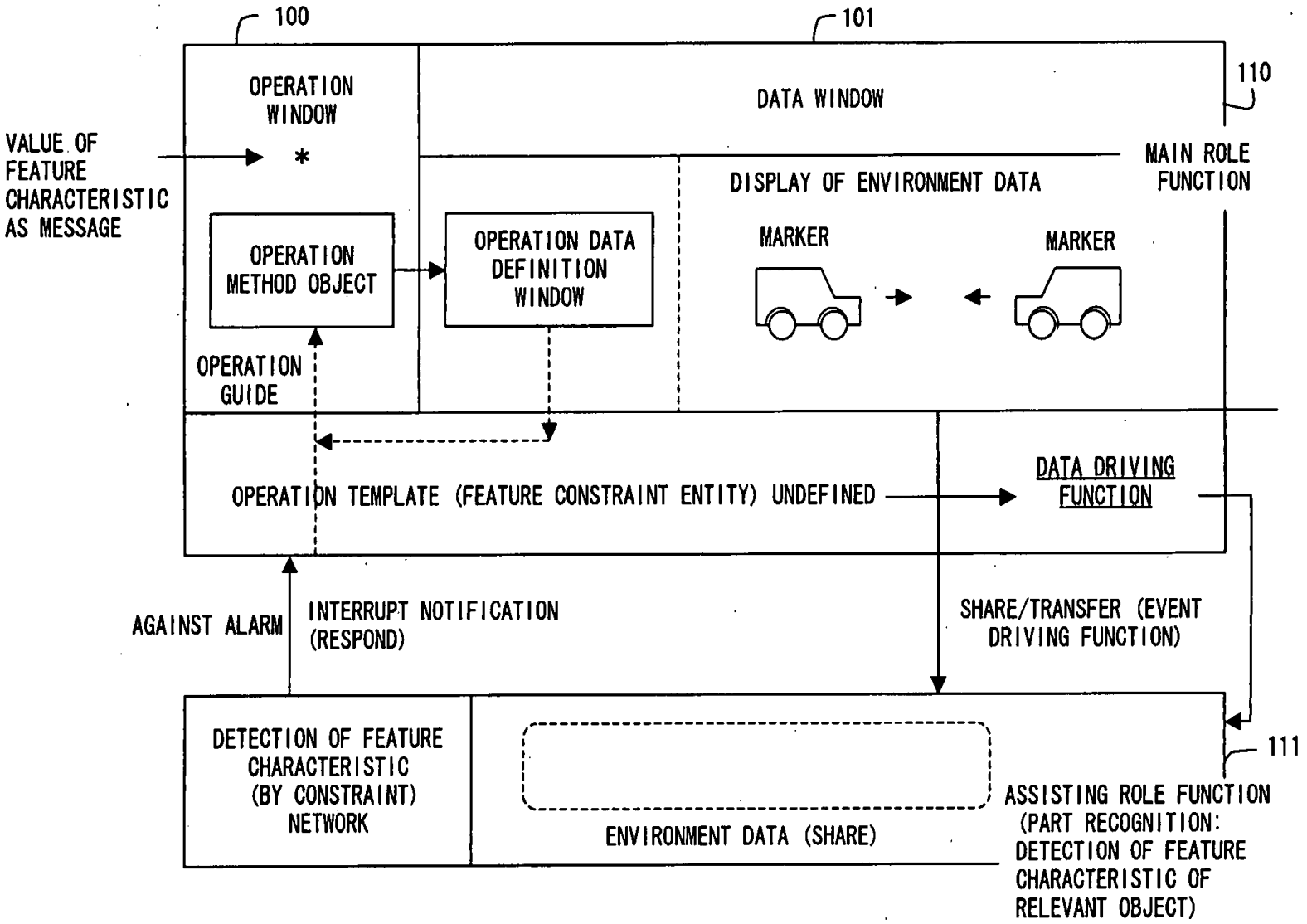

FIG. 20

REJECTED EXTENDED

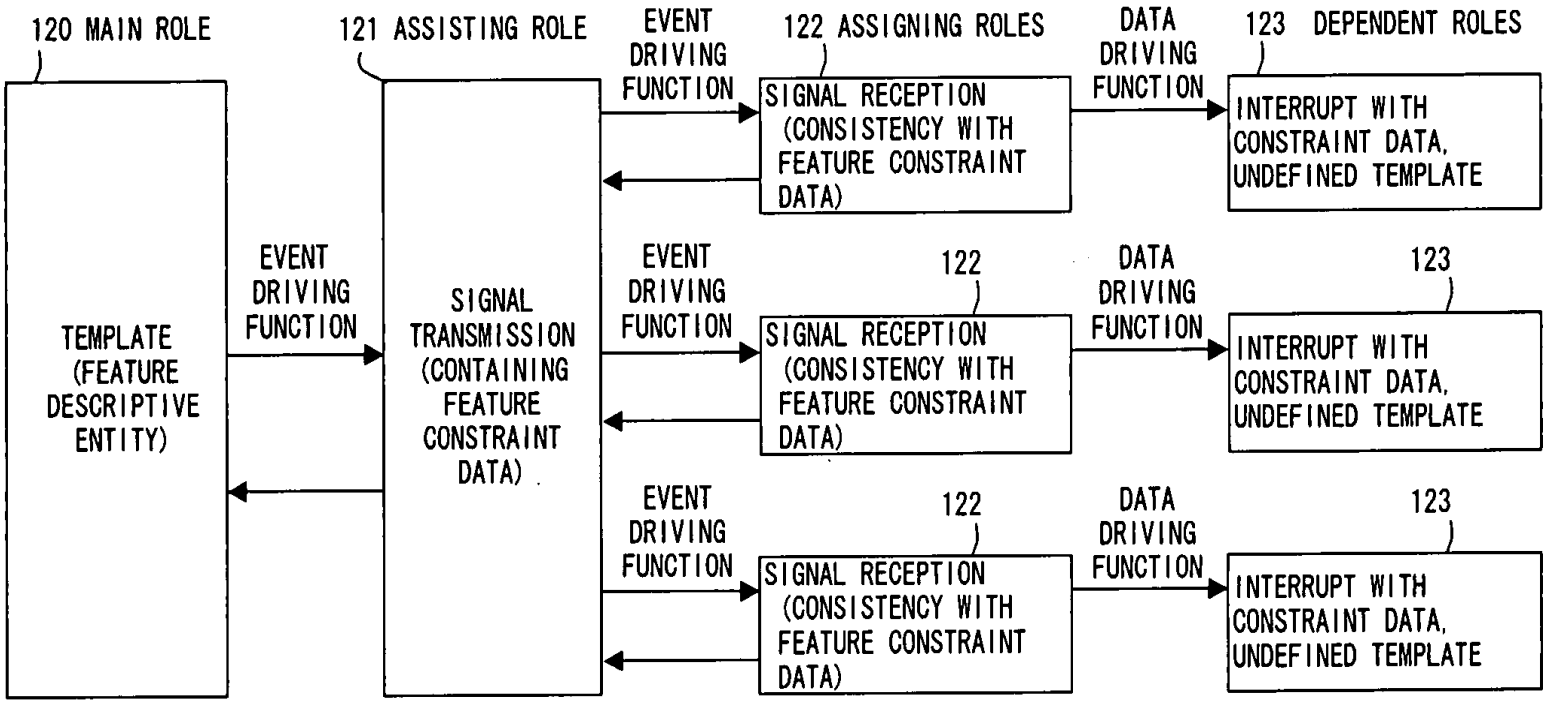

FIG. 21

TOSHIBA CORPORATION

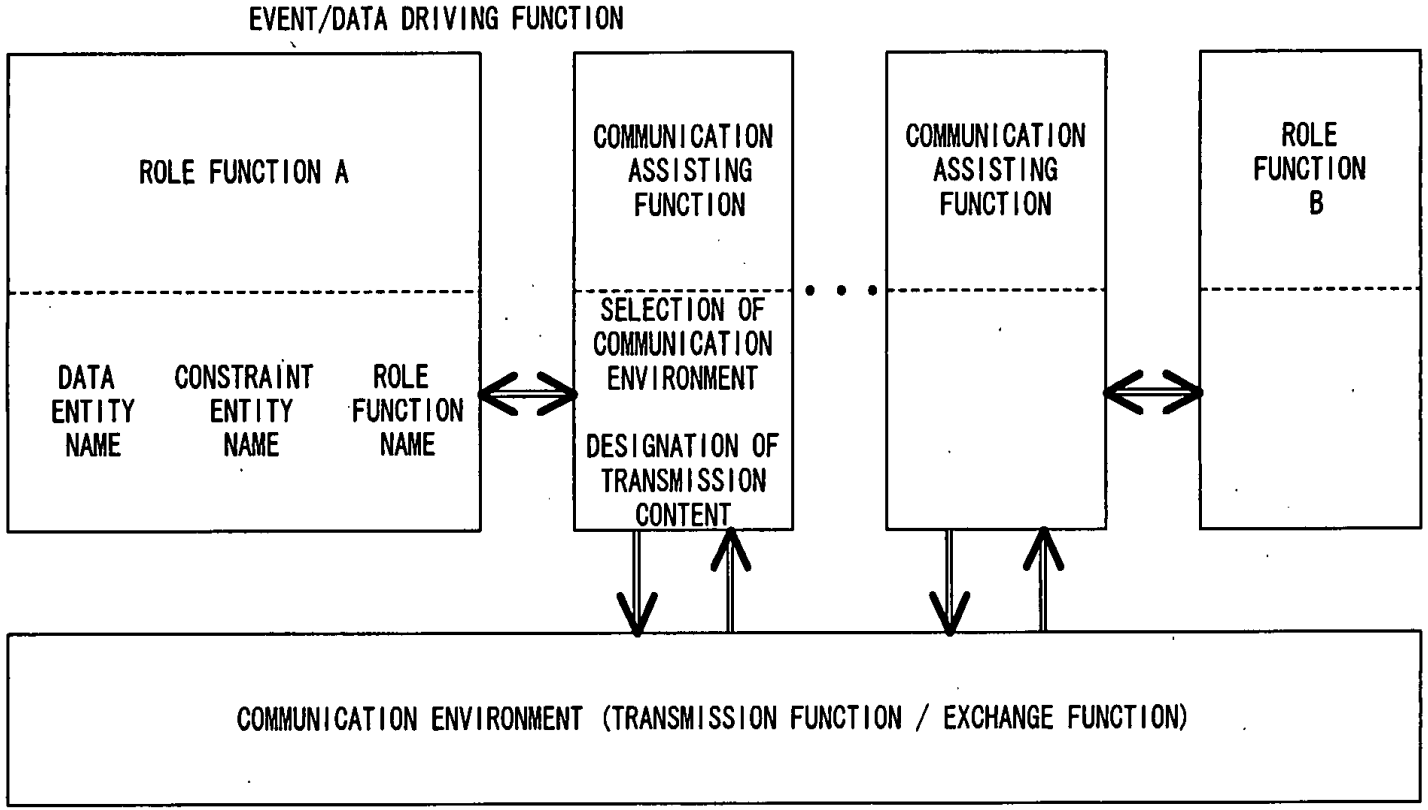

FIG. 22

PCT/EP2004/010565

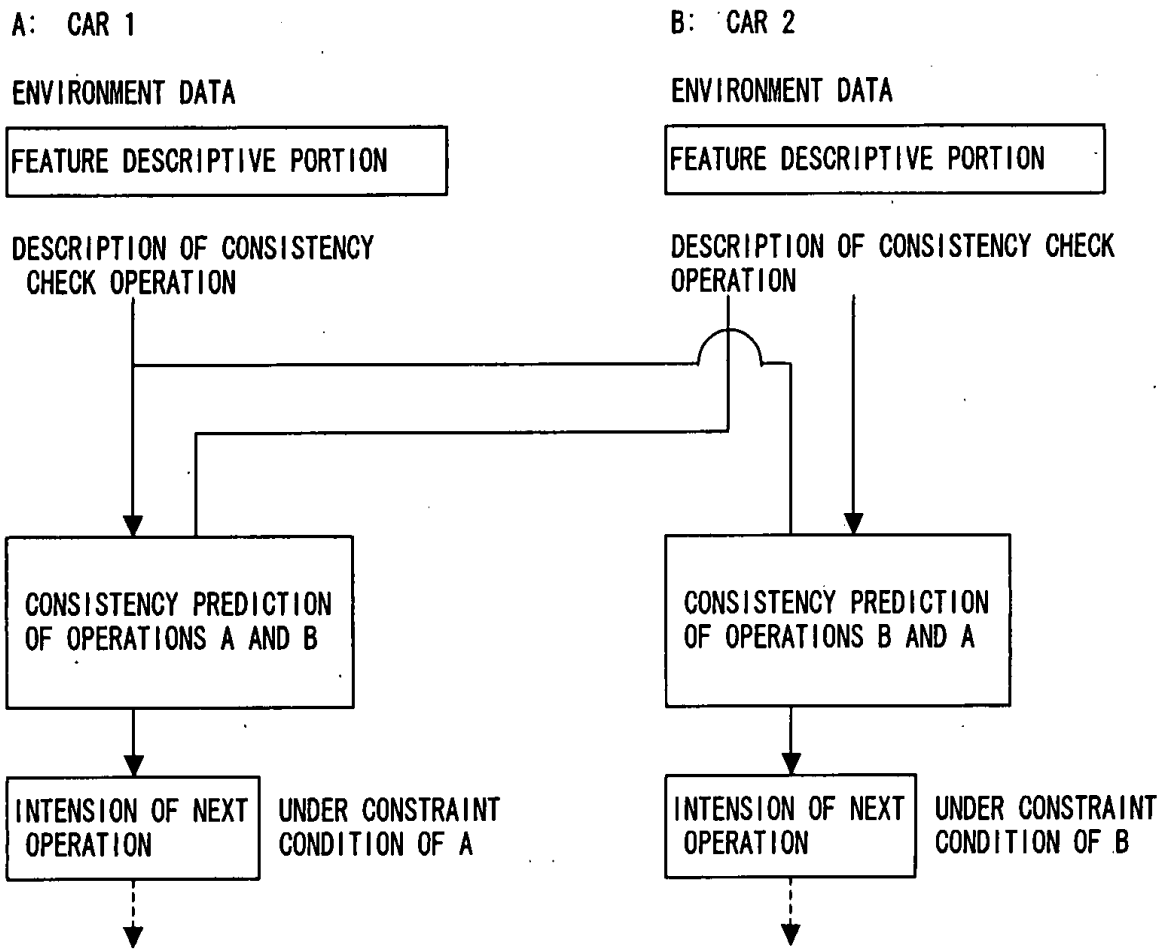

FIG. 23

PCT/JP2004/018643

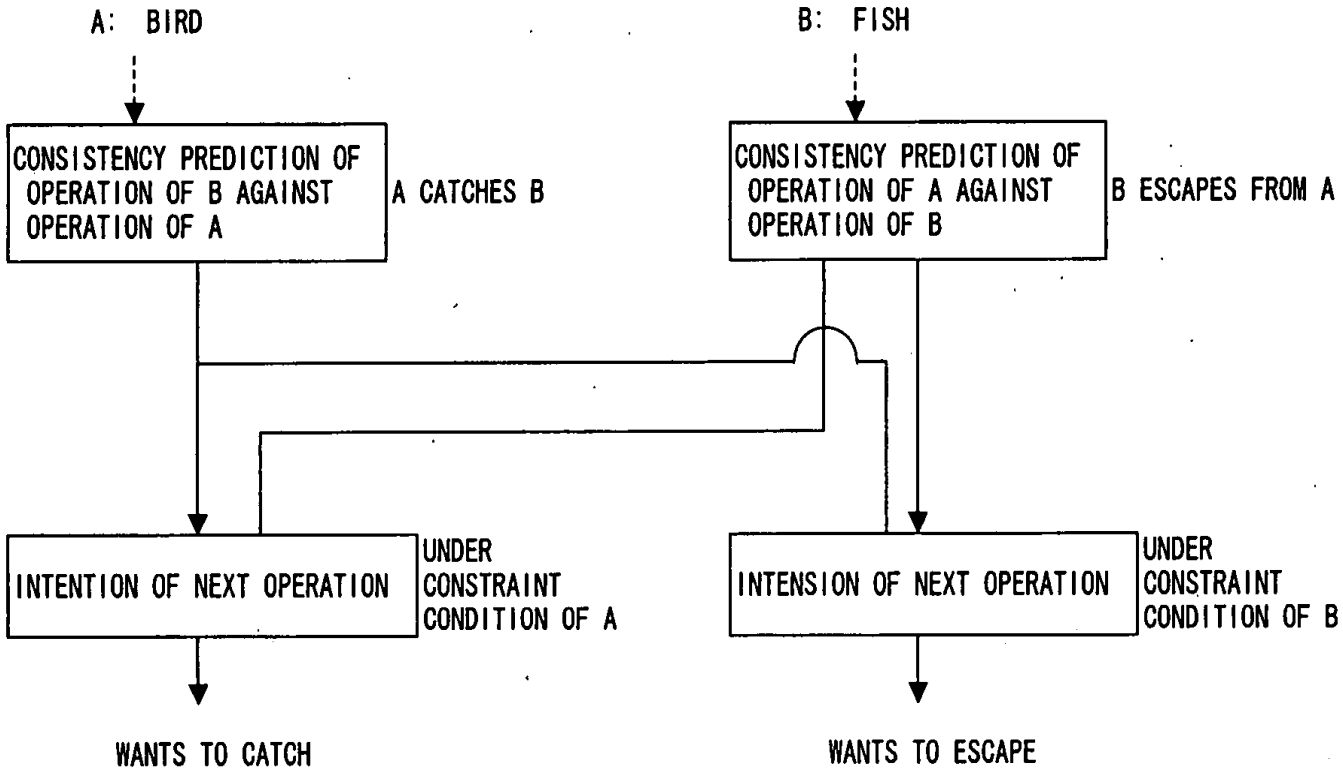

FIG. 24

PCT/JP2005/011053

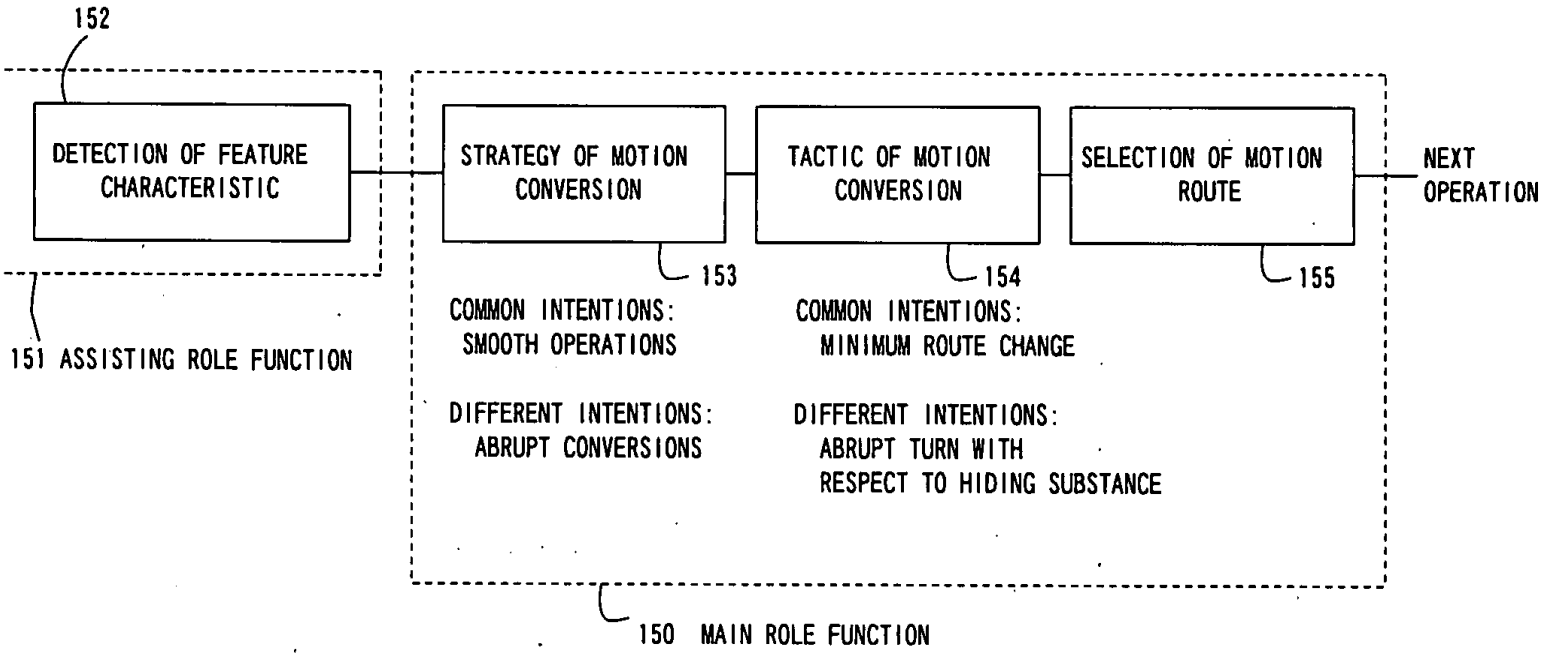

FIG. 25

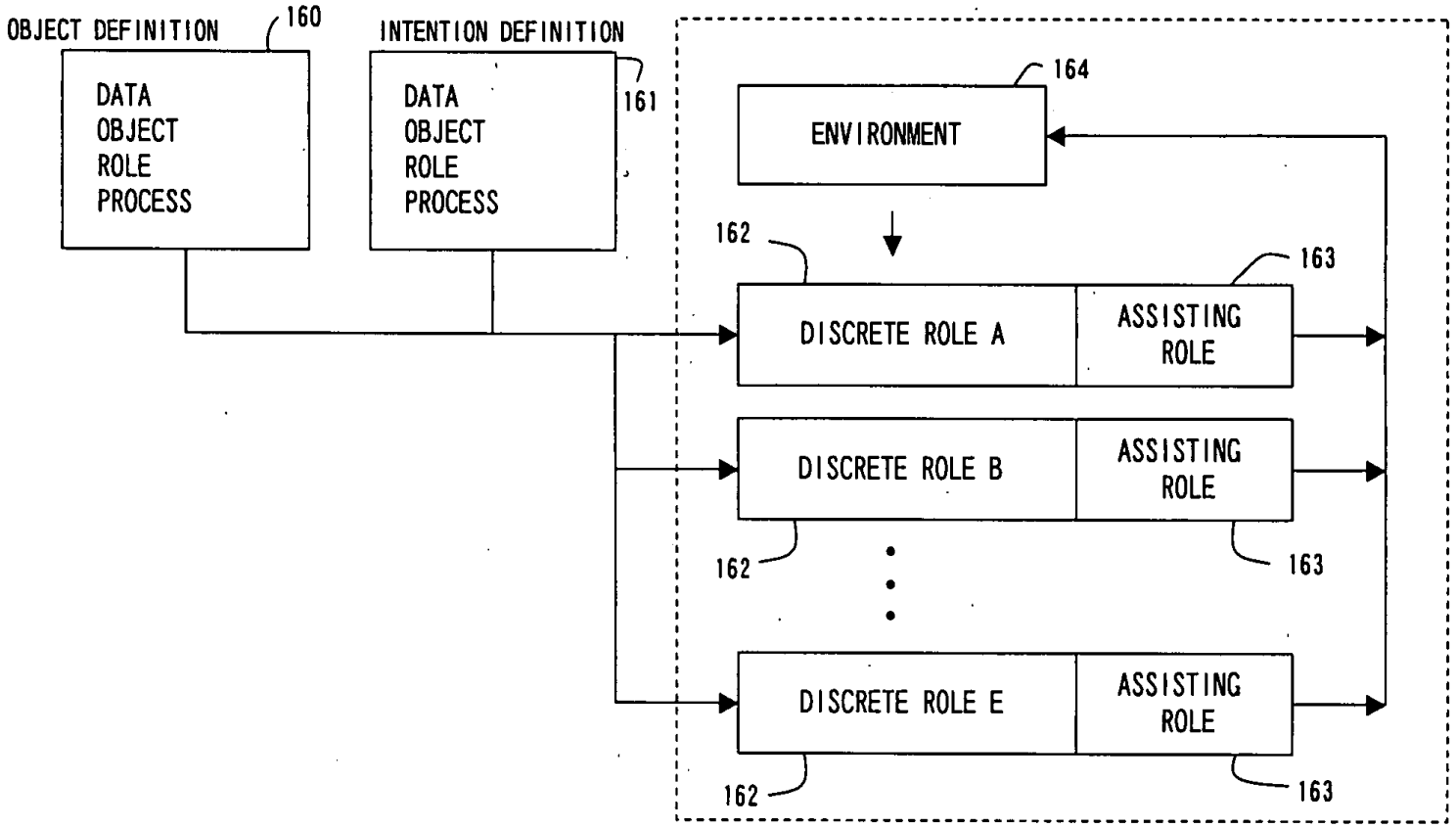
OBJECT DEFINITION
160
DATA
OBJECT
ROLE
PROCESS
INTENTION DEFINITION
161
DATA
OBJECT
ROLE
PROCESS
164
ENVIRONMENT
162
163
DISCRETE ROLE A
ASSISTING ROLE
DISCRETE ROLE B
ASSISTING ROLE
162
163
DISCRETE ROLE E
ASSISTING ROLE
162
163

FIG. 26

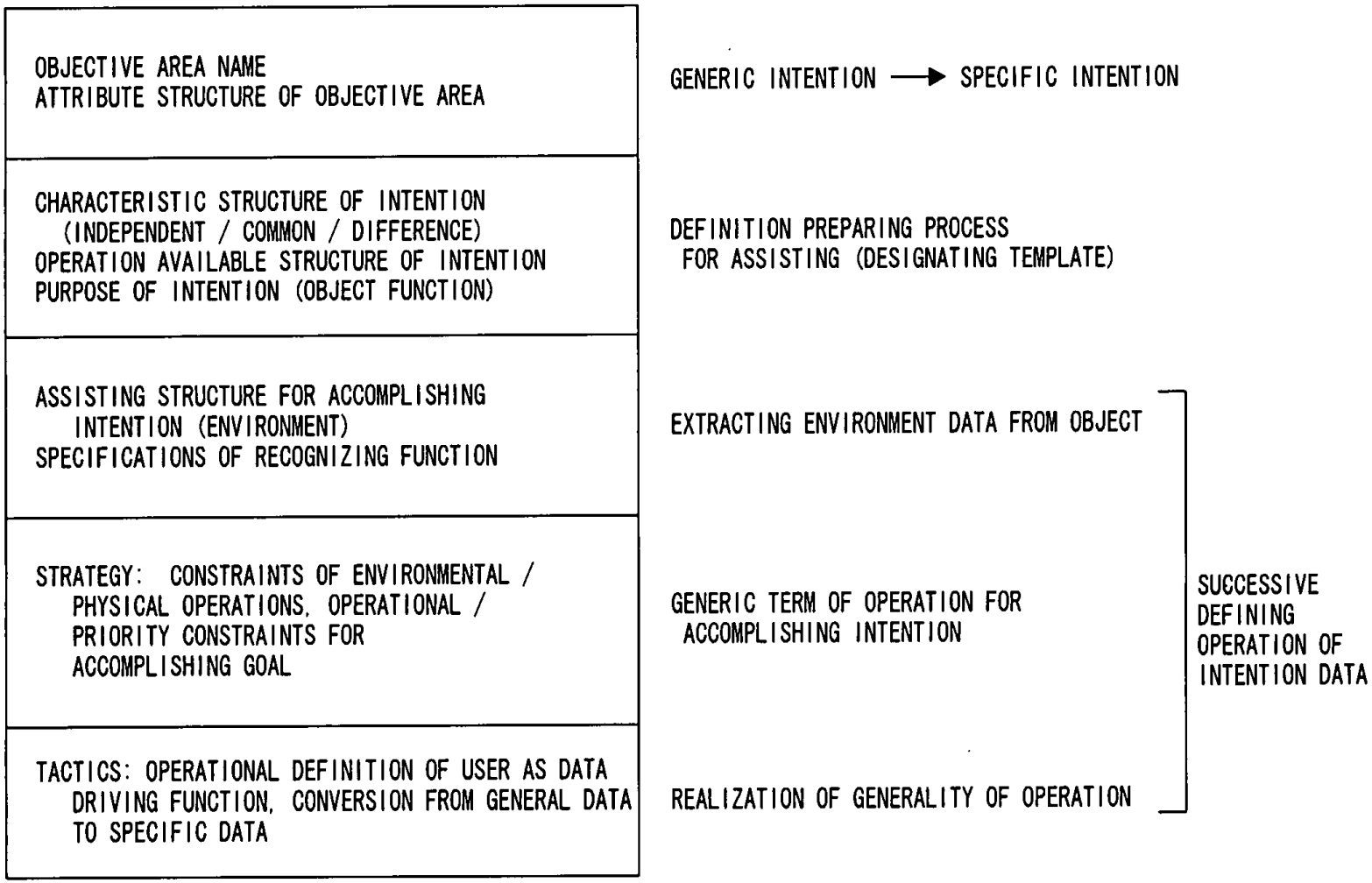
OBJECTIVE AREA NAME
ATTRIBUTE STRUCTURE OF OBJECTIVE AREA
GENERIC INTENTION → SPECIFIC INTENTION
CHARACTERISTIC STRUCTURE OF INTENTION
(INDEPENDENT / COMMON / DIFFERENCE)
OPERATION AVAILABLE STRUCTURE OF INTENTION
PURPOSE OF INTENTION (OBJECT FUNCTION)
DEFINITION PREPARING PROCESS
FOR ASSISTING (DESIGNATING TEMPLATE)
ASSISTING STRUCTURE FOR ACCOMPLISHING
INTENTION (ENVIRONMENT)
SPECIFICATIONS OF RECOGNIZING FUNCTION
EXTRACTING ENVIRONMENT DATA FROM OBJECT
STRATEGY: CONSTRAINTS OF ENVIRONMENTAL /
PHYSICAL OPERATIONS, OPERATIONAL /
PRIORITY CONSTRAINTS FOR
ACCOMPLISHING GOAL
GENERIC TERM OF OPERATION FOR
ACCOMPLISHING INTENTION
SUCCESSIVE
DEFINING
OPERATION OF
INTENTION DATA
TACTICS: OPERATIONAL DEFINITION OF USER AS DATA
DRIVING FUNCTION, CONVERSION FROM GENERAL DATA
TO SPECIFIC DATA
REALIZATION OF GENERALITY OF OPERATION

FIG. 27

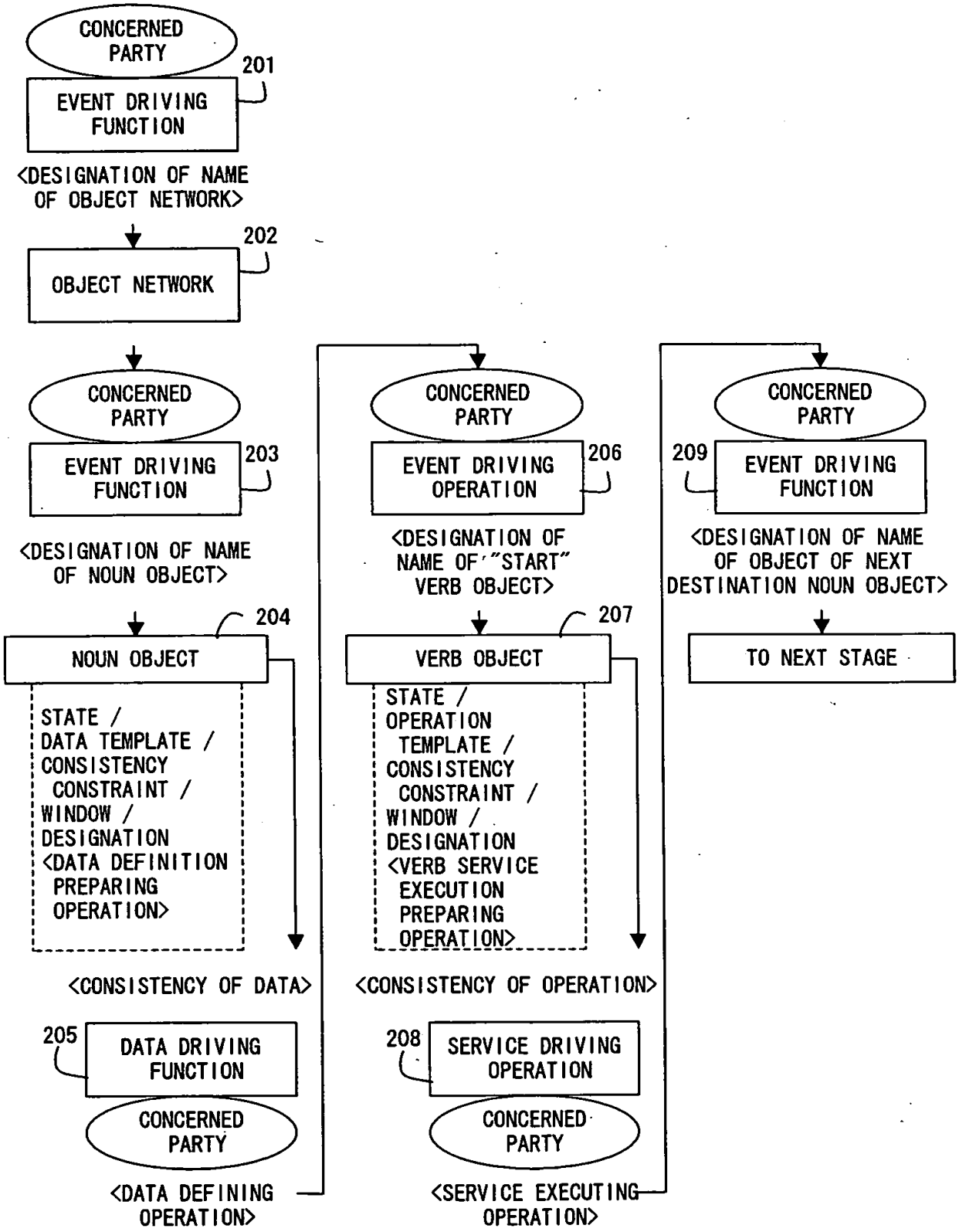
CONCERNED PARTY
201
EVENT DRIVING FUNCTION
<DESIGNATION OF NAME OF OBJECT NETWORK>
202
OBJECT NETWORK
CONCERNED PARTY
203
EVENT DRIVING FUNCTION
<DESIGNATION OF NAME OF NOUN OBJECT>
204
NOUN OBJECT
STATE / DATA TEMPLATE / CONSISTENCY CONSTRAINT / WINDOW / DESIGNATION <DATA DEFINITION PREPARING OPERATION>
<CONSISTENCY OF DATA>
205
DATA DRIVING FUNCTION
CONCERNED PARTY
<DATA DEFINING OPERATION>
CONCERNED PARTY
206
EVENT DRIVING OPERATION
<DESIGNATION OF NAME OF "START" VERB OBJECT>
207
VERB OBJECT
STATE / OPERATION TEMPLATE / CONSISTENCY CONSTRAINT / WINDOW / DESIGNATION <VERB SERVICE EXECUTION PREPARING OPERATION>
<CONSISTENCY OF OPERATION>
208
SERVICE DRIVING OPERATION
CONCERNED PARTY
<SERVICE EXECUTING OPERATION>
CONCERNED PARTY
209
EVENT DRIVING FUNCTION
<DESIGNATION OF NAME OF OBJECT OF NEXT DESTINATION NOUN OBJECT>
TO NEXT STAGE

FIG. 28

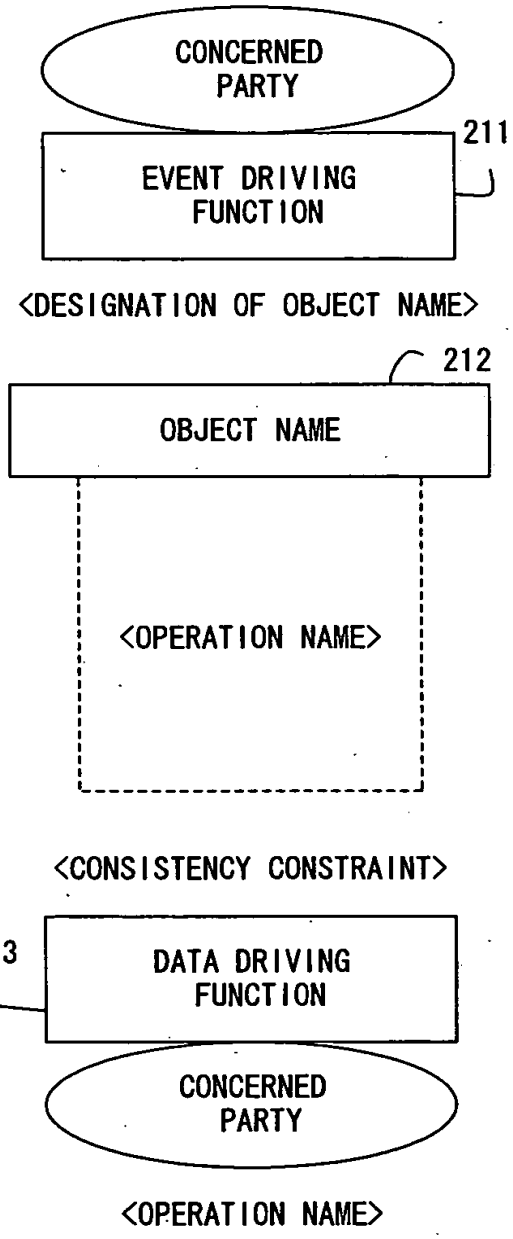
CONCERNED PARTY
211
EVENT DRIVING FUNCTION
<DESIGNATION OF OBJECT NAME>
212
OBJECT NAME
<OPERATION NAME>
<CONSISTENCY CONSTRAINT>
213
DATA DRIVING FUNCTION
CONCERNED PARTY
<OPERATION NAME>

FIG. 29

REJECTED EXHIBIT

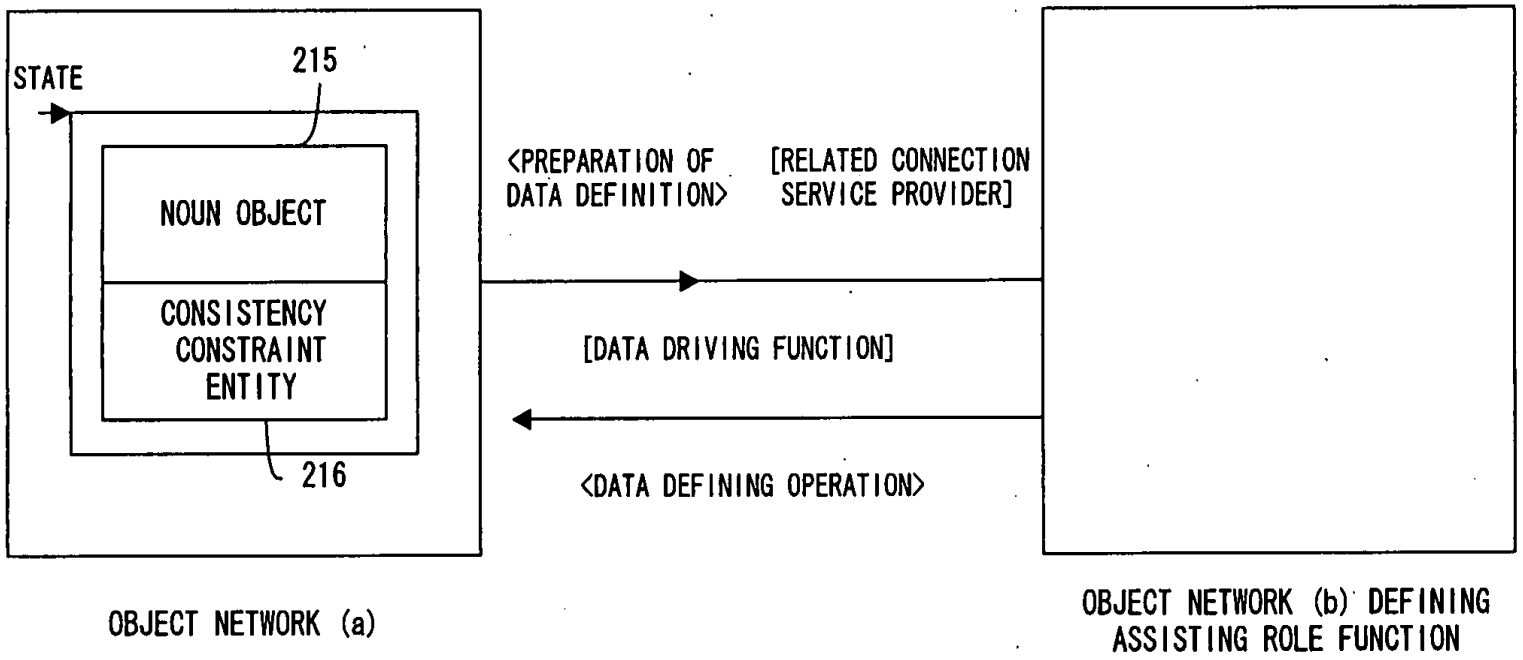

FIG. 30

PCT/JP2003/000000

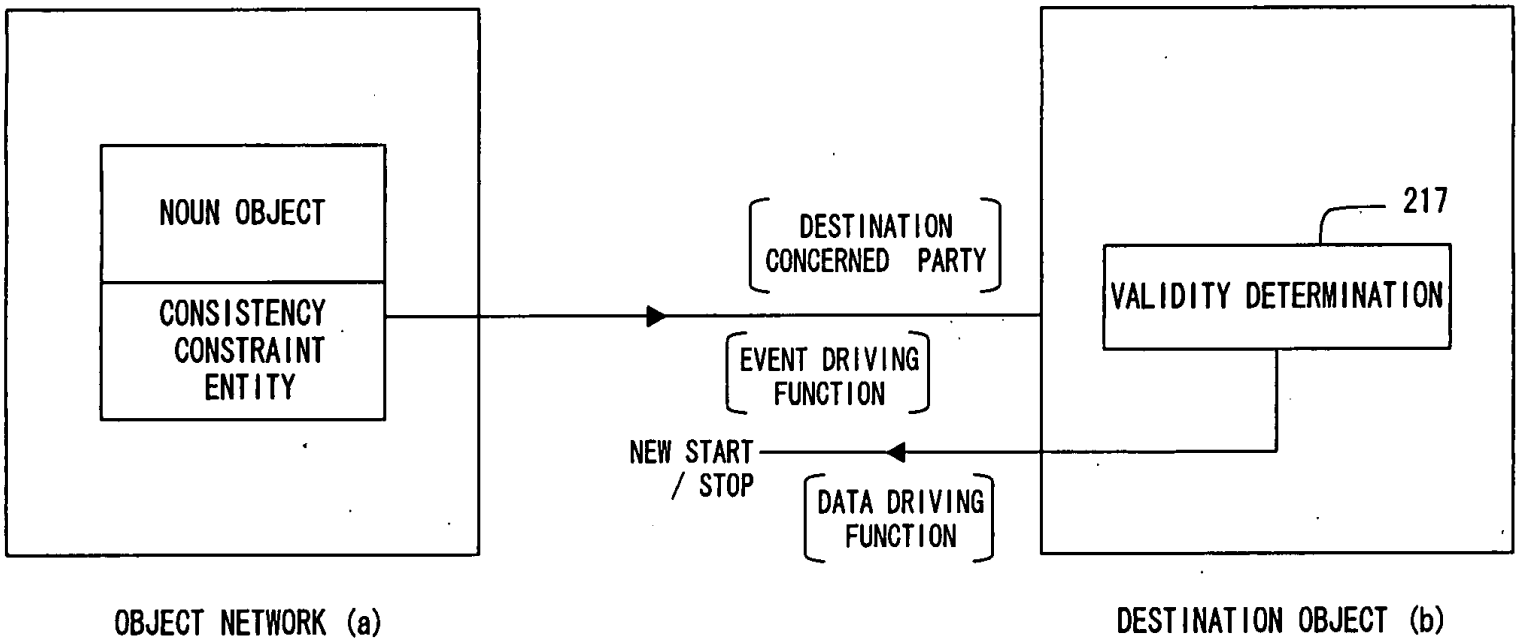

FIG. 31

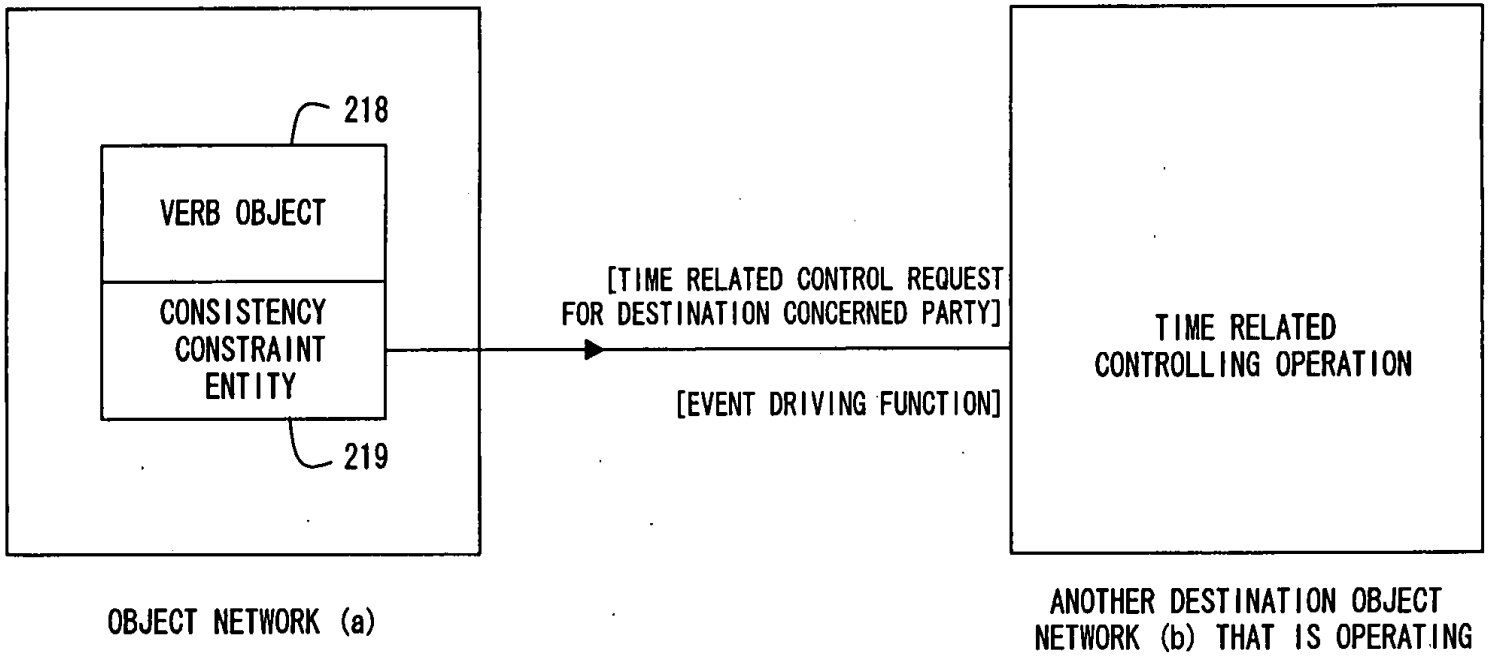
218
VERB OBJECT
CONSISTENCY CONSTRAINT ENTITY
219
[TIME RELATED CONTROL REQUEST FOR DESTINATION CONCERNED PARTY]
[EVENT DRIVING FUNCTION]
TIME RELATED CONTROLLING OPERATION
OBJECT NETWORK (a)
ANOTHER DESTINATION OBJECT NETWORK (b) THAT IS OPERATING

FIG. 32

PRESENTATION

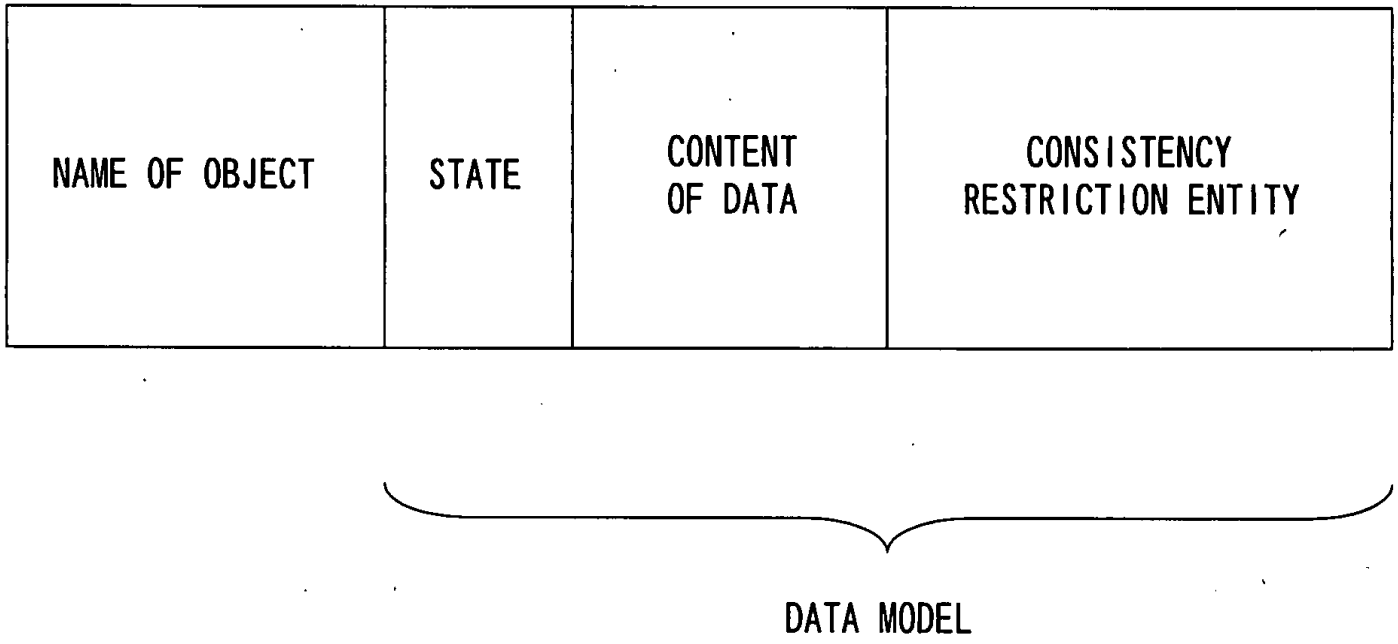

FIG. 33

PACED ENTRIED

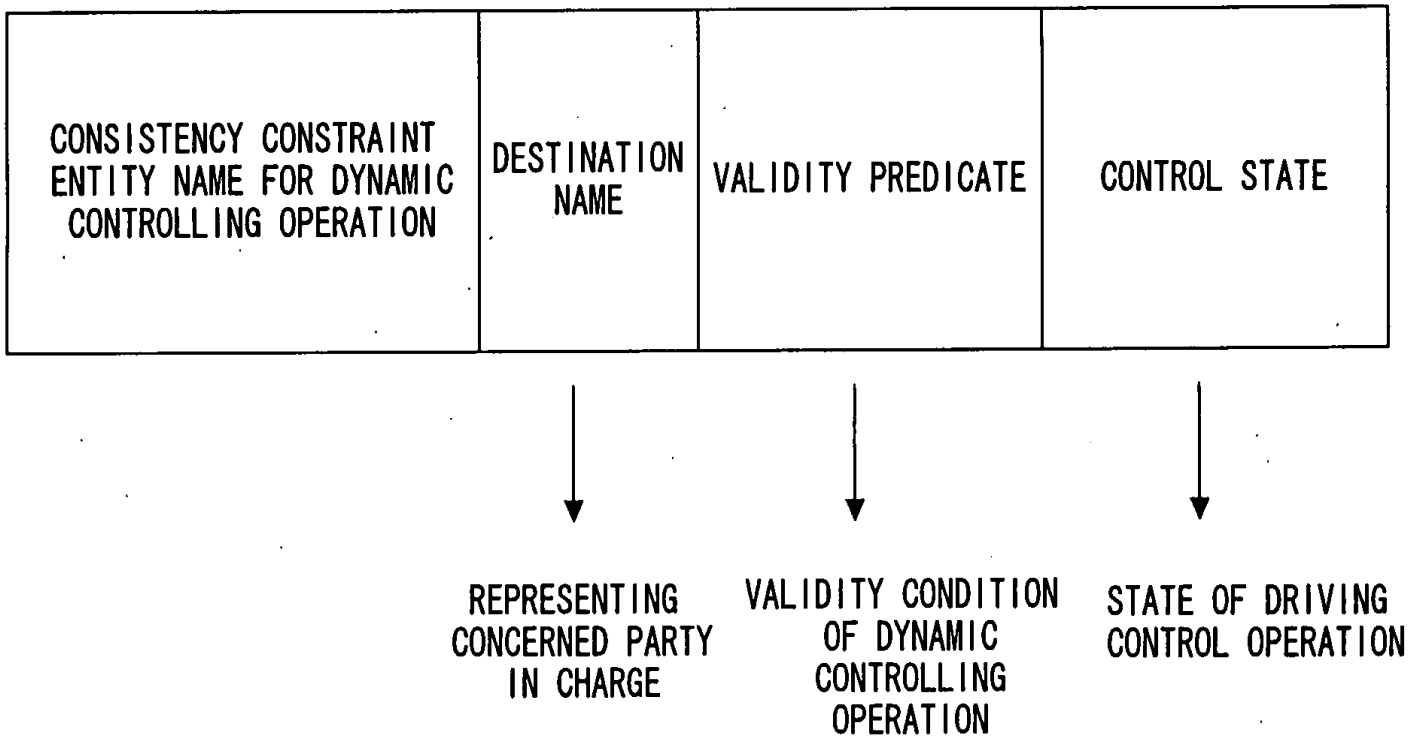

FIG. 34

STRUCTURE SERVICE		CONTROL PROCESS SERVICE		DATA STRUCTURE SERVICE		COMMUNI-CATION SERVICE	SIMULATION SERVICE
(I) REQUEST FROM CONCERNED PARTY	(II) REQUEST FROM SYSTEM	(III) CONTROLLING PROCESS (PROCESS)	(IV) CONSISTENCY PROCESS	(V) SEARCH	(VI) DATA-INTENSIVE	(VII) COMMUNI-CATION (BROADCAST, TRANS-MISSION)	(VIII) PARAMETER DETERMINATION
EVENT DRIVING FUNCTION	DATA DRIVING FUNCTION	STATE, TIME RELATED CONTROL	CONSISTENCY CONSTRAINT	NAME MANAGE-MENT	DATA MANAGEMENT, GRAPH STRUCTURE, EDITOR	NOTIFICA-TION BETWEEN CONCERNED PARTIES	EVALUATION

FIG. 35

PCT/JP2003/012015

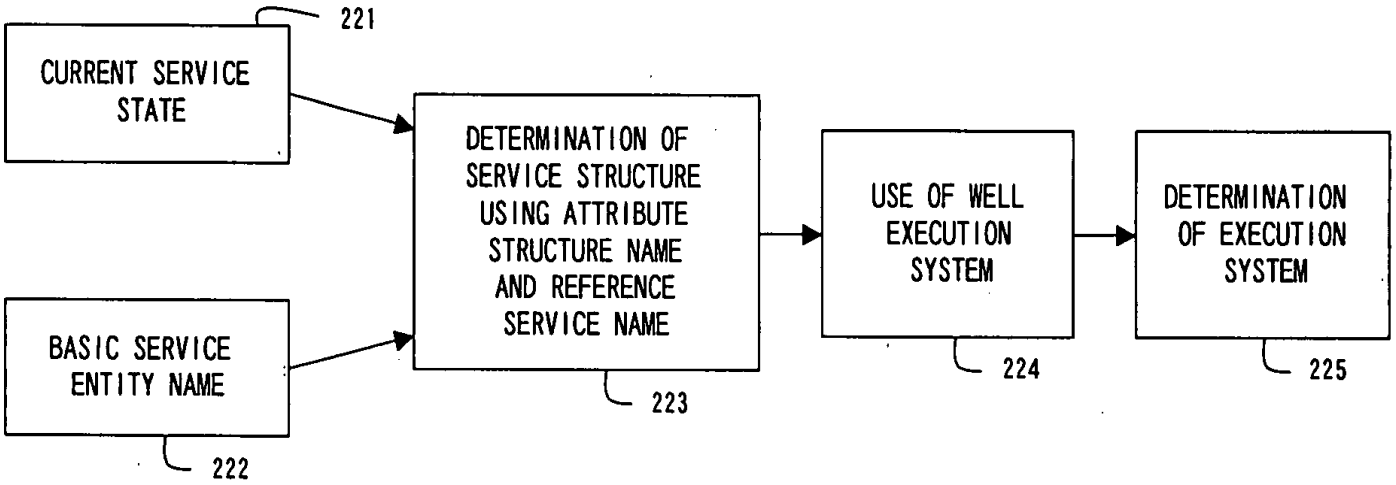

FIG. 36

PATENT APPLICATION

<table>
<tr><td>STATIC ADAPTATION</td><td colspan="2">DYNAMIC ADAPTATION</td></tr>
<tr><td>CHANGE OF TACTIC / STRATEGY PARAMETERS</td><td>CHANGE OF TACTIC / STRATEGY NET STRUCTURE</td><td>DUTIES OF CONCERNED PARTIES / FORMATION OF TEAM, CHANGE OF INTENTION, AND CHANGE OF STATE</td></tr>
<tr><td>SYSTEM REQUEST SERVICE</td><td>CONSISTENCY PROCESS SERVICE</td><td>STRUCTURE SERVICE</td></tr>
<tr><td colspan="3">COMMUNICATION SERVICE, SIMULATION SERVICE</td></tr>
</table>

FIG. 37

REPRODUCED AT THE PUBLIC

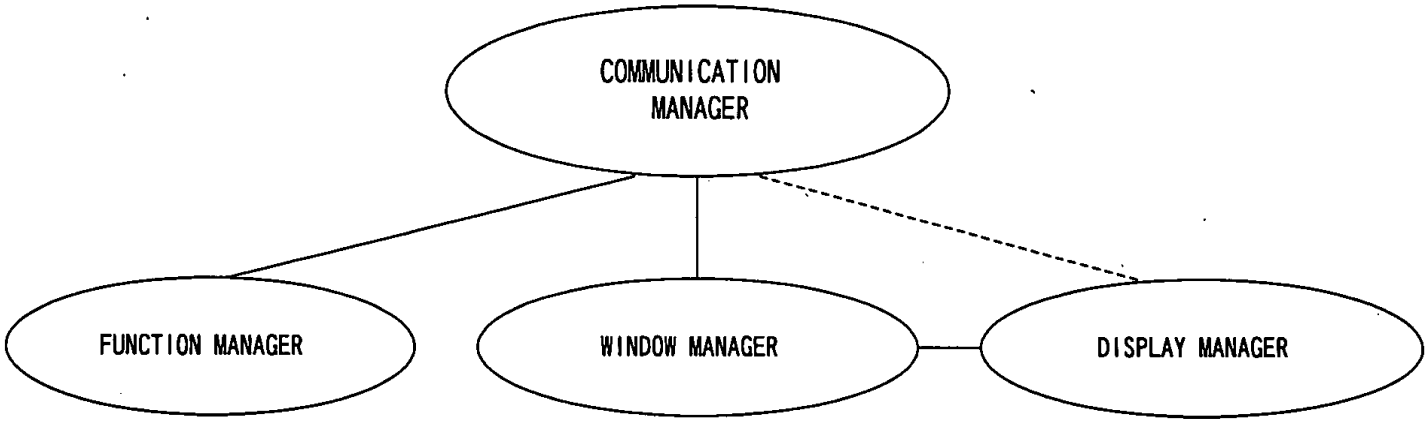

FIG. 38

PATENT APPLICATION

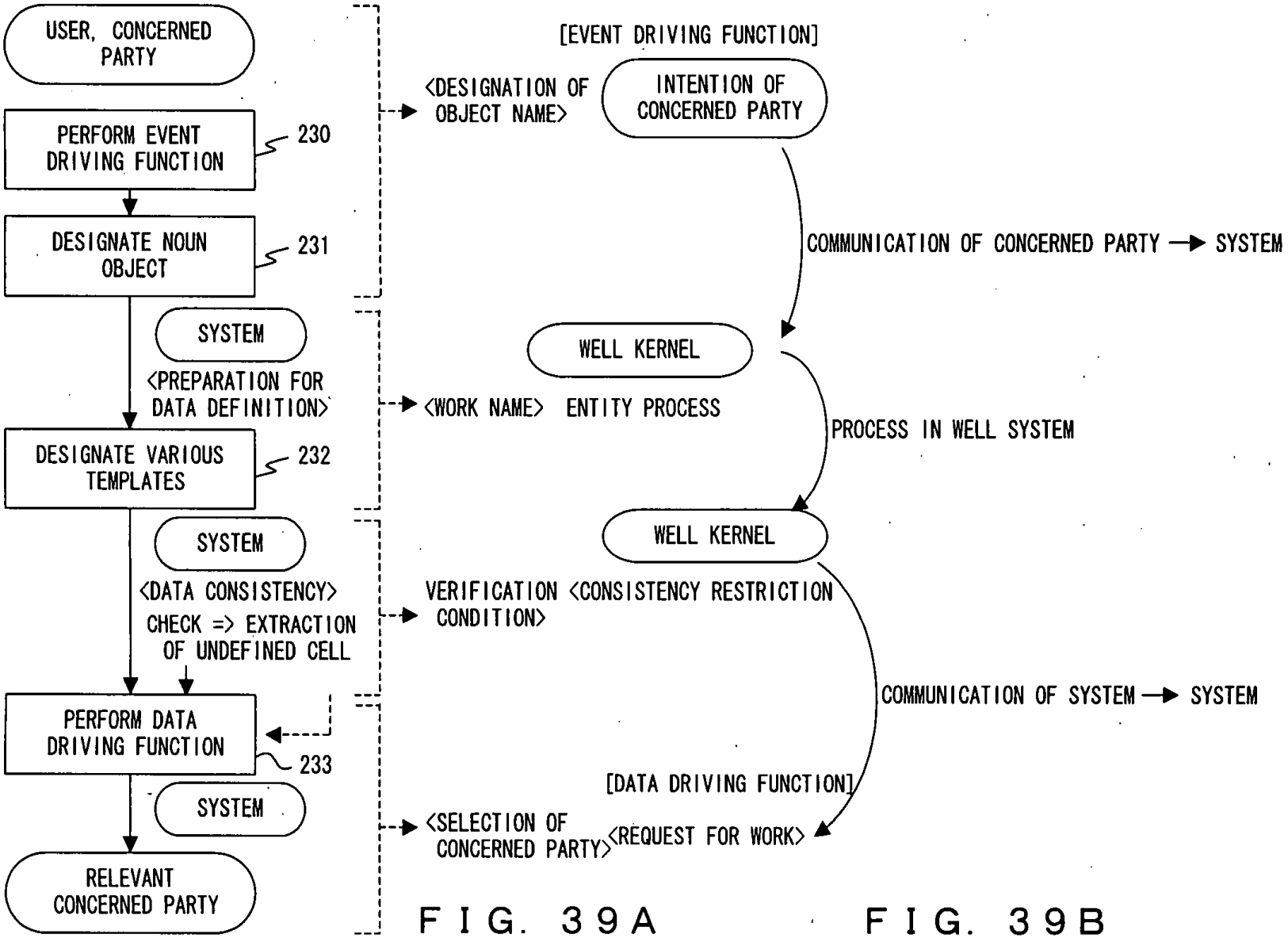

FIG. 39A FIG. 39B

PATENT APPLICATION

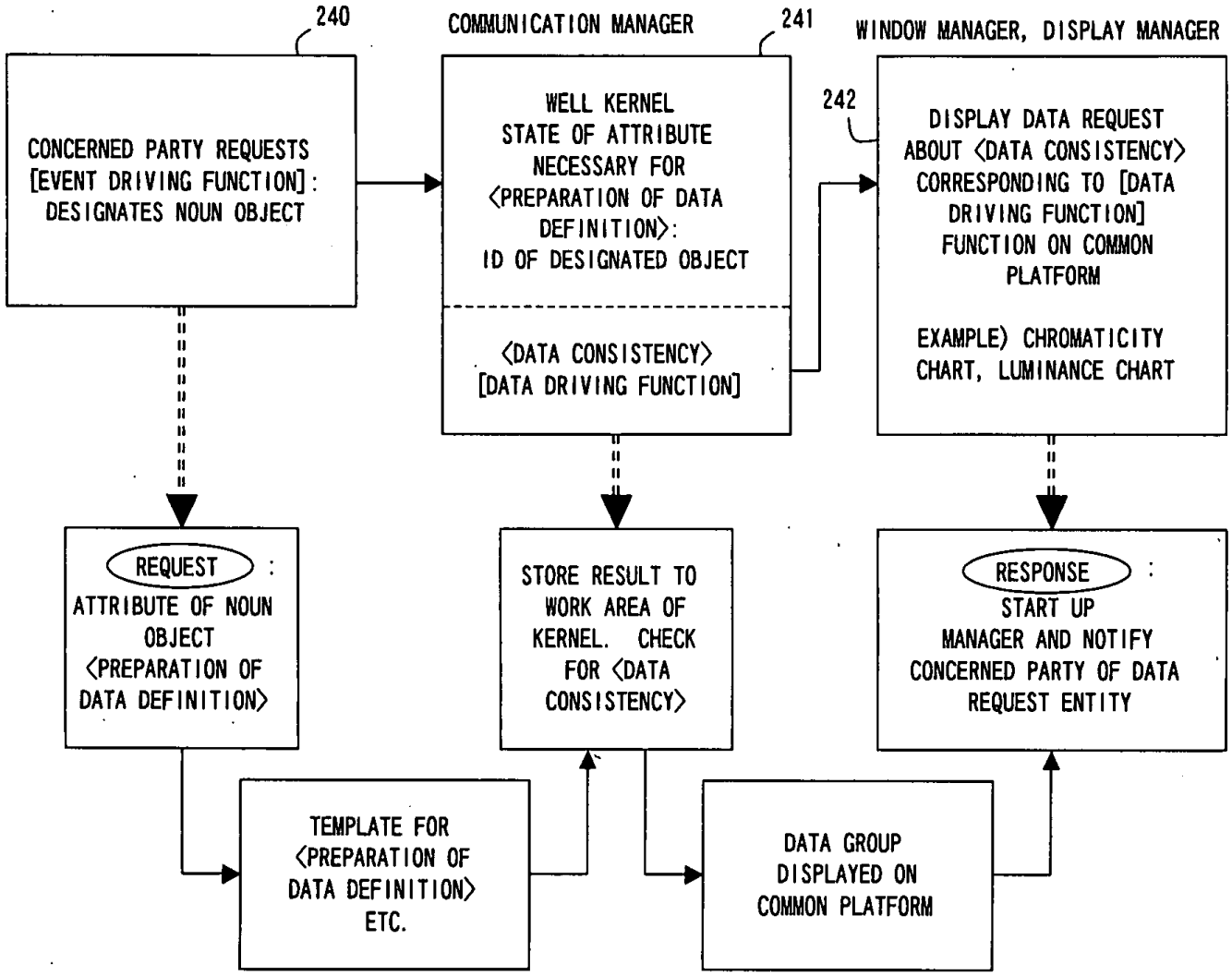

FIG. 40

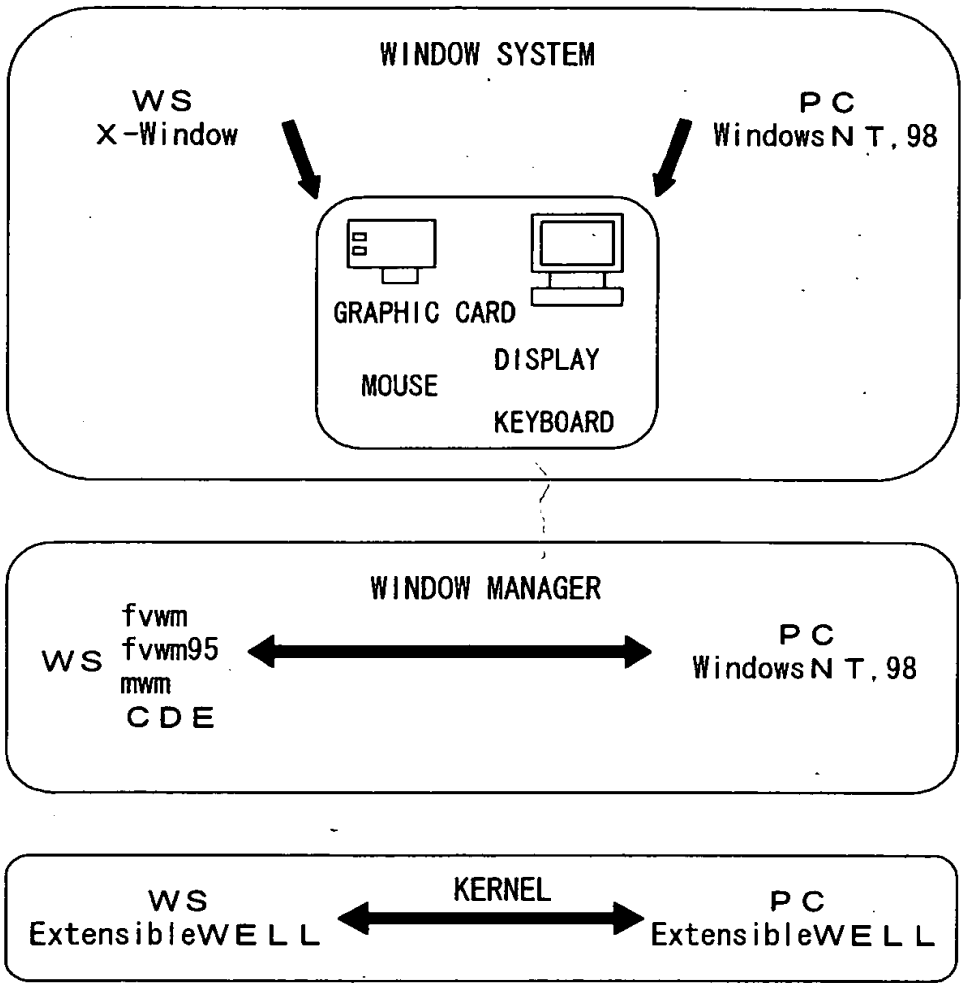
WINDOW SYSTEM
WS
X-Window
PC
WindowsNT,98
GRAPHIC CARD
DISPLAY
MOUSE
KEYBOARD
WINDOW MANAGER
WS
fvwm
fvwm95
mwm
CDE
PC
WindowsNT,98
KERNEL
WS
ExtensibleWELL
PC
ExtensibleWELL

FIG. 41

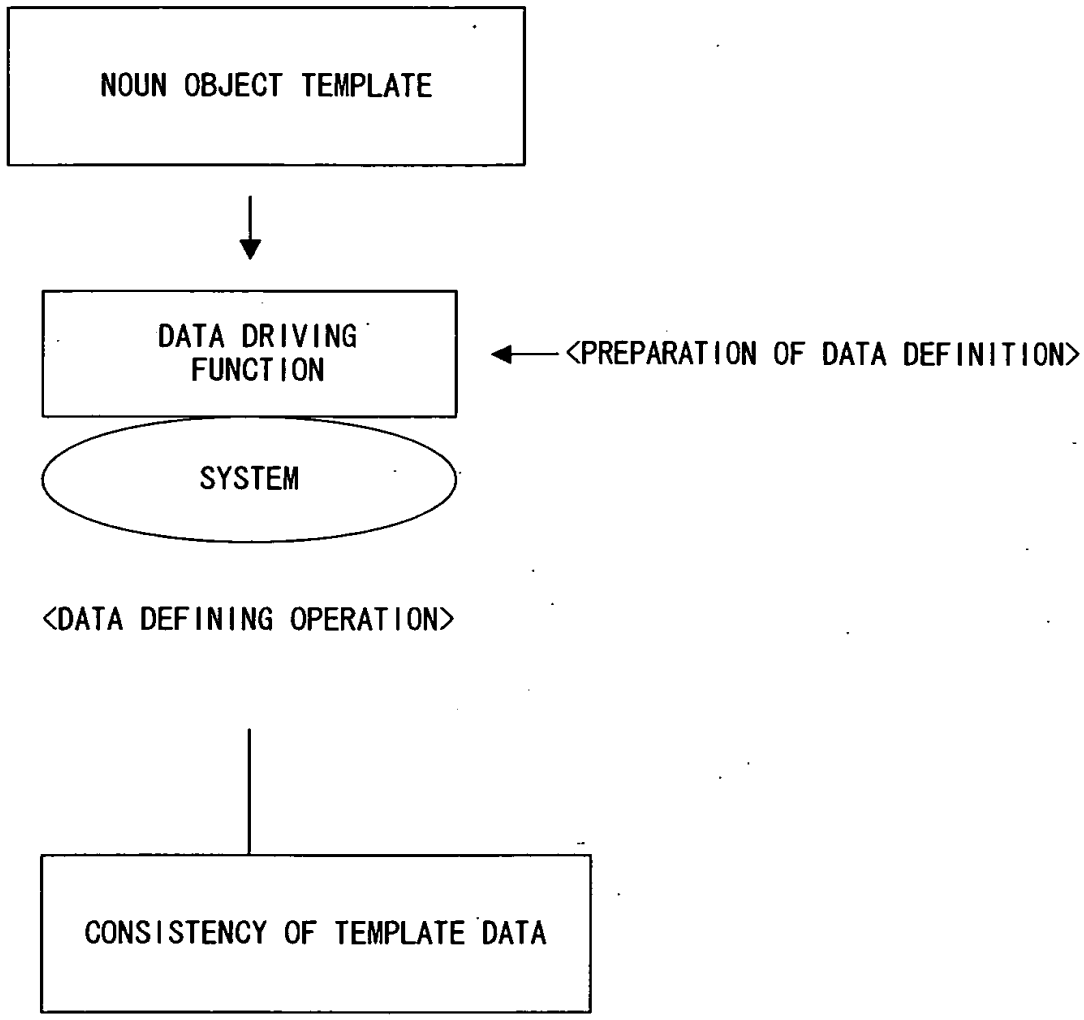
NOUN OBJECT TEMPLATE
DATA DRIVING FUNCTION
<PREPARATION OF DATA DEFINITION>
SYSTEM
<DATA DEFINING OPERATION>
CONSISTENCY OF TEMPLATE DATA

FIG. 42

PCT/JP2000/000000

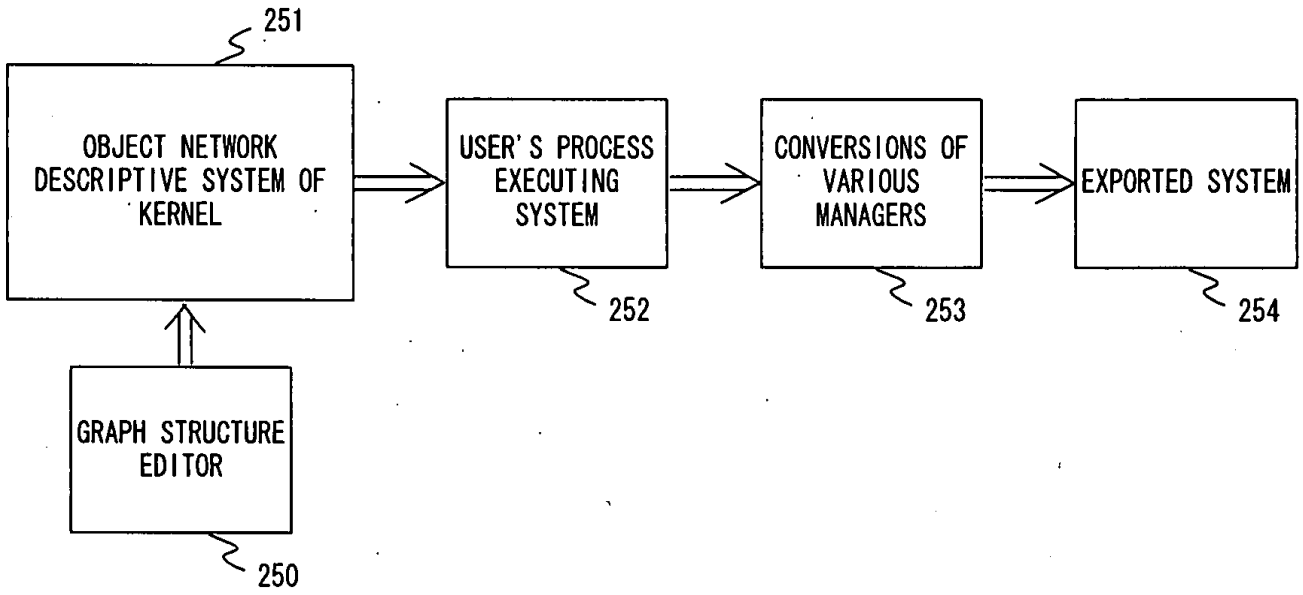

FIG. 43

PATENT CIPHOPS

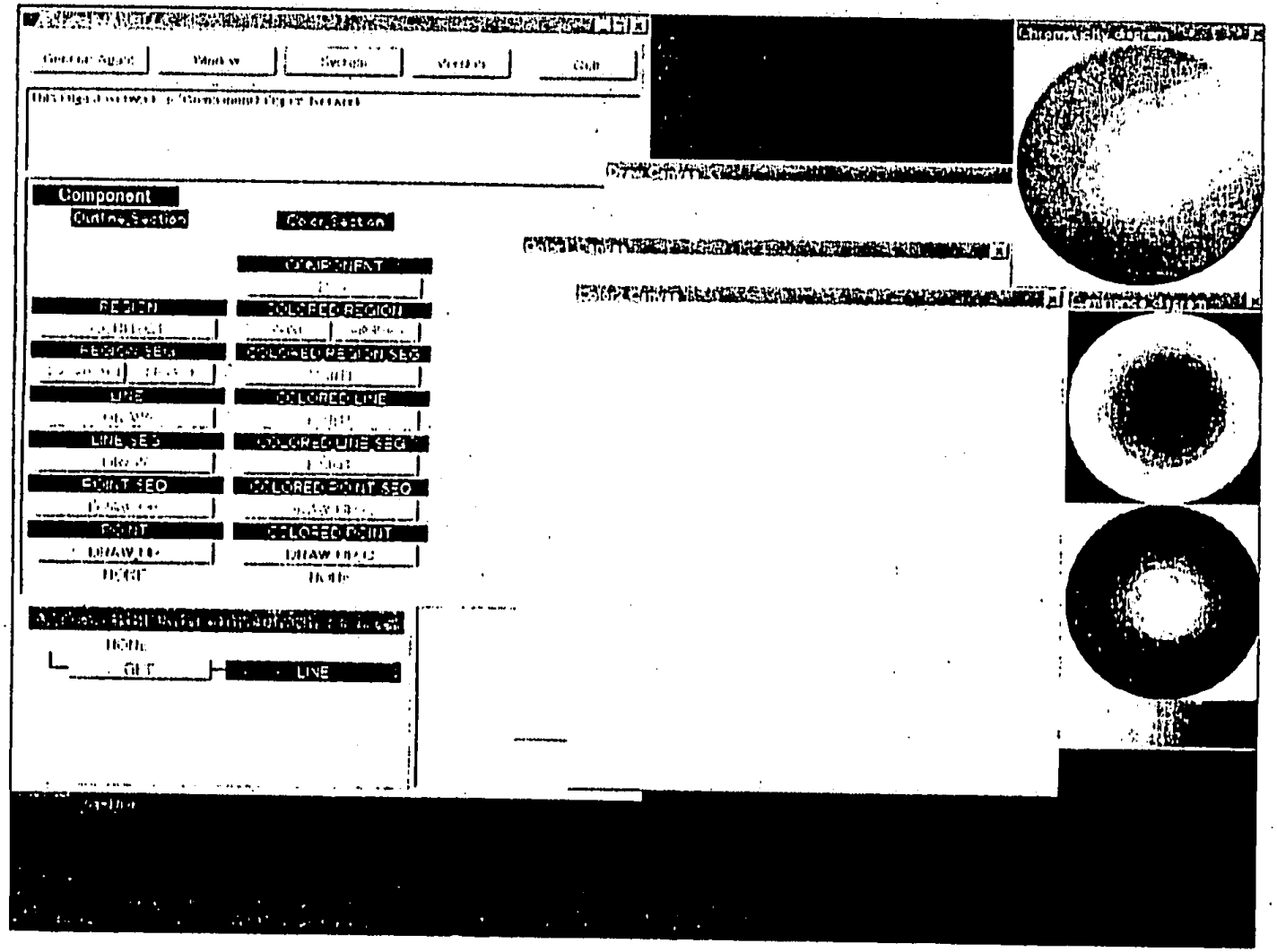

FIG. 44

PACKED ENTRIES

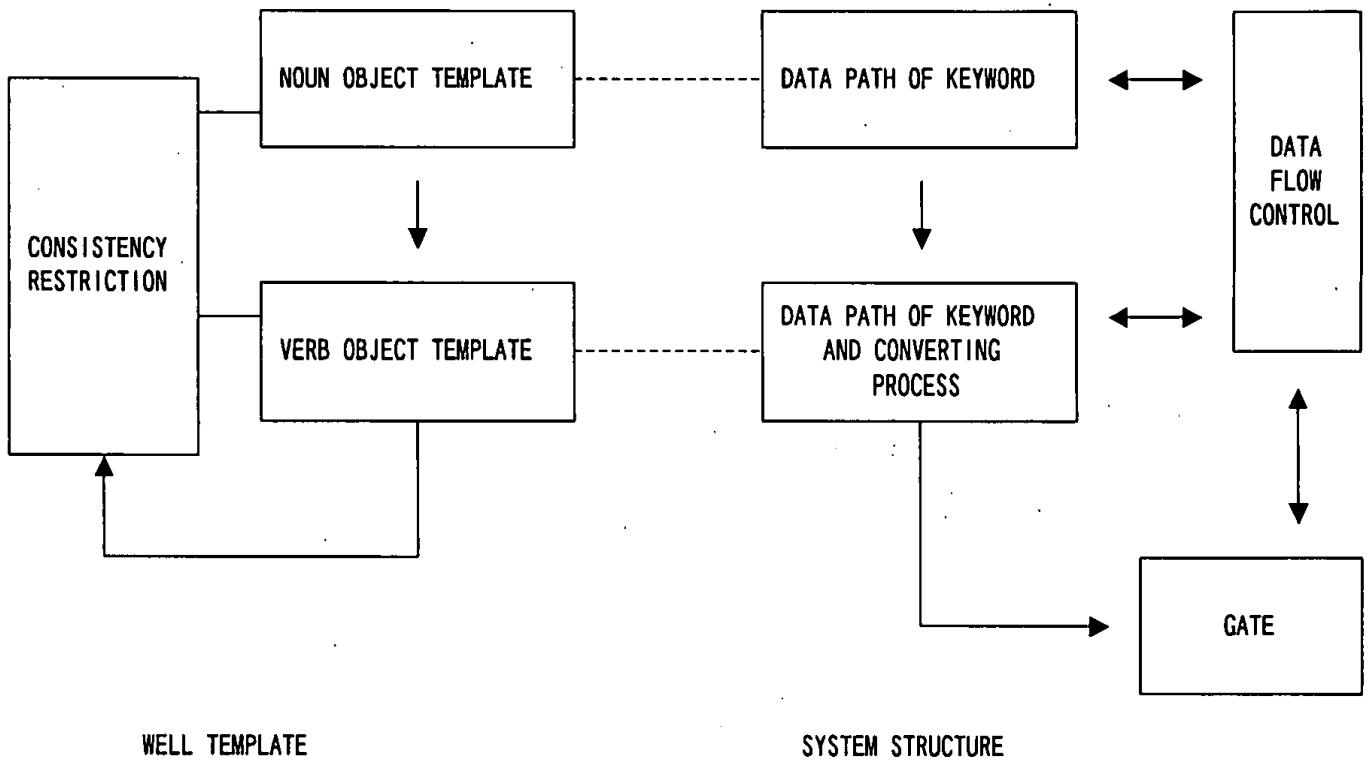

FIG. 45

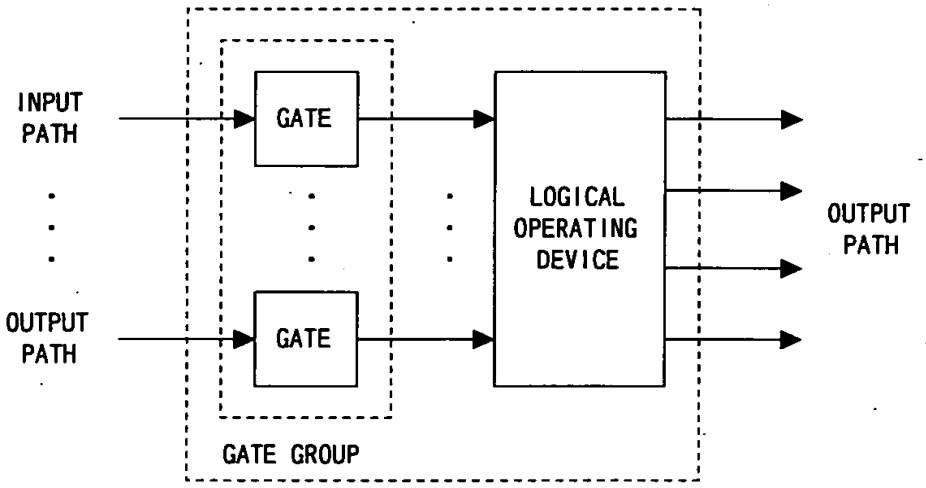
INPUT
PATH
OUTPUT
PATH
GATE
GATE
LOGICAL
OPERATING
DEVICE
OUTPUT
PATH
GATE GROUP

FIG. 46

PATENT APPLICATION

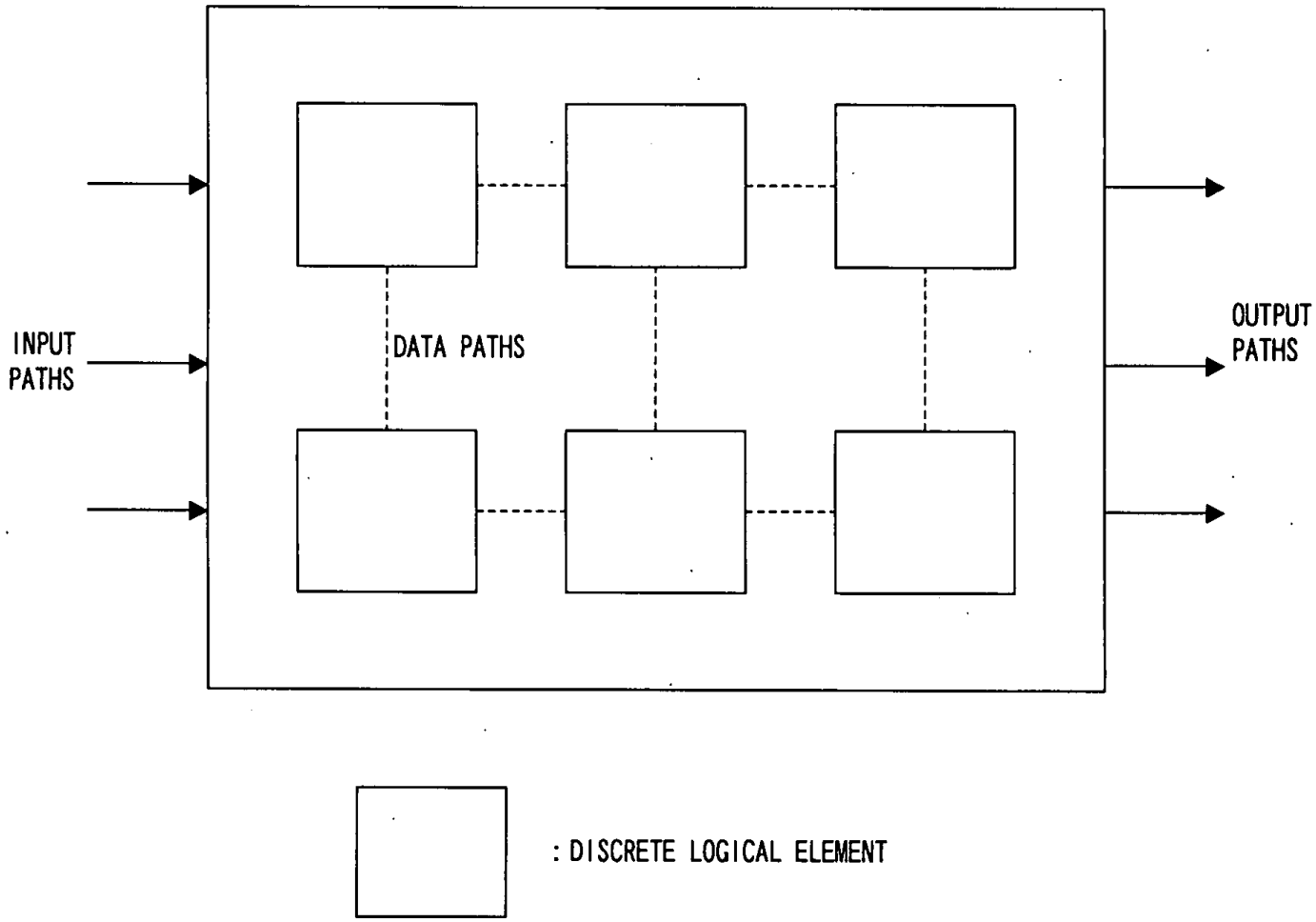

FIG. 47

PATENT APPLICATION

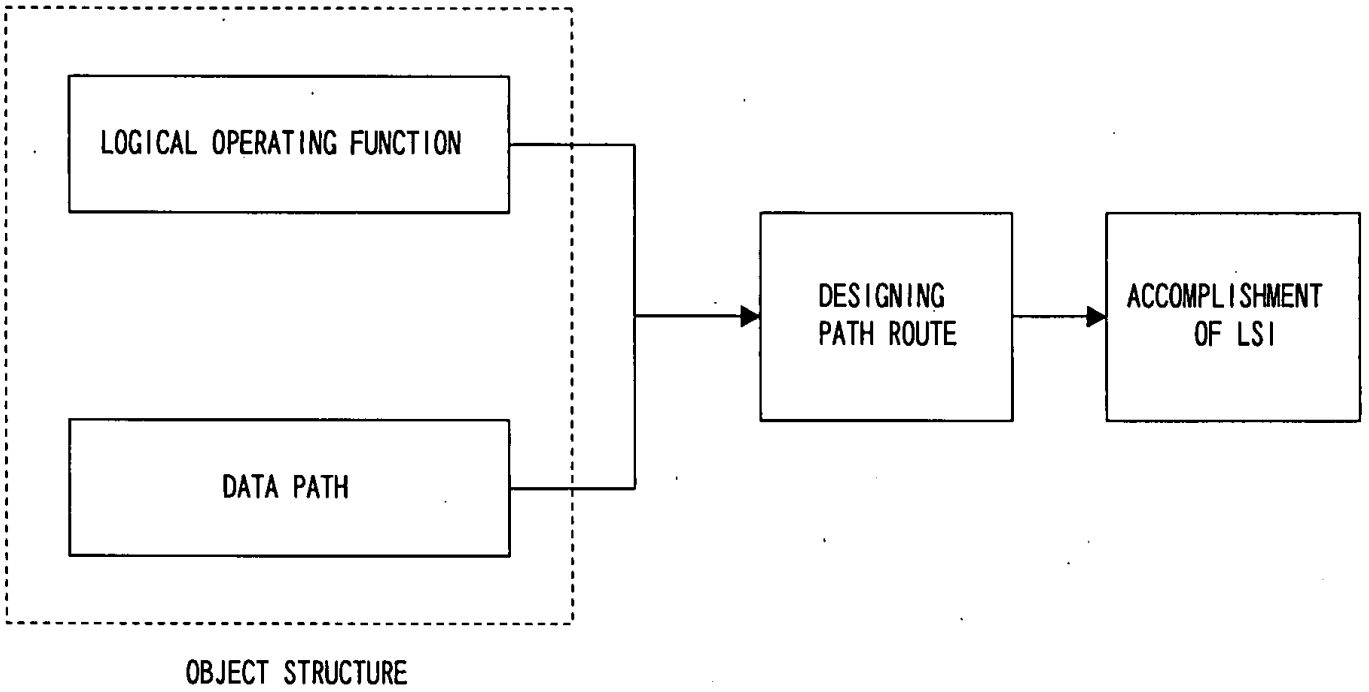

FIG. 48

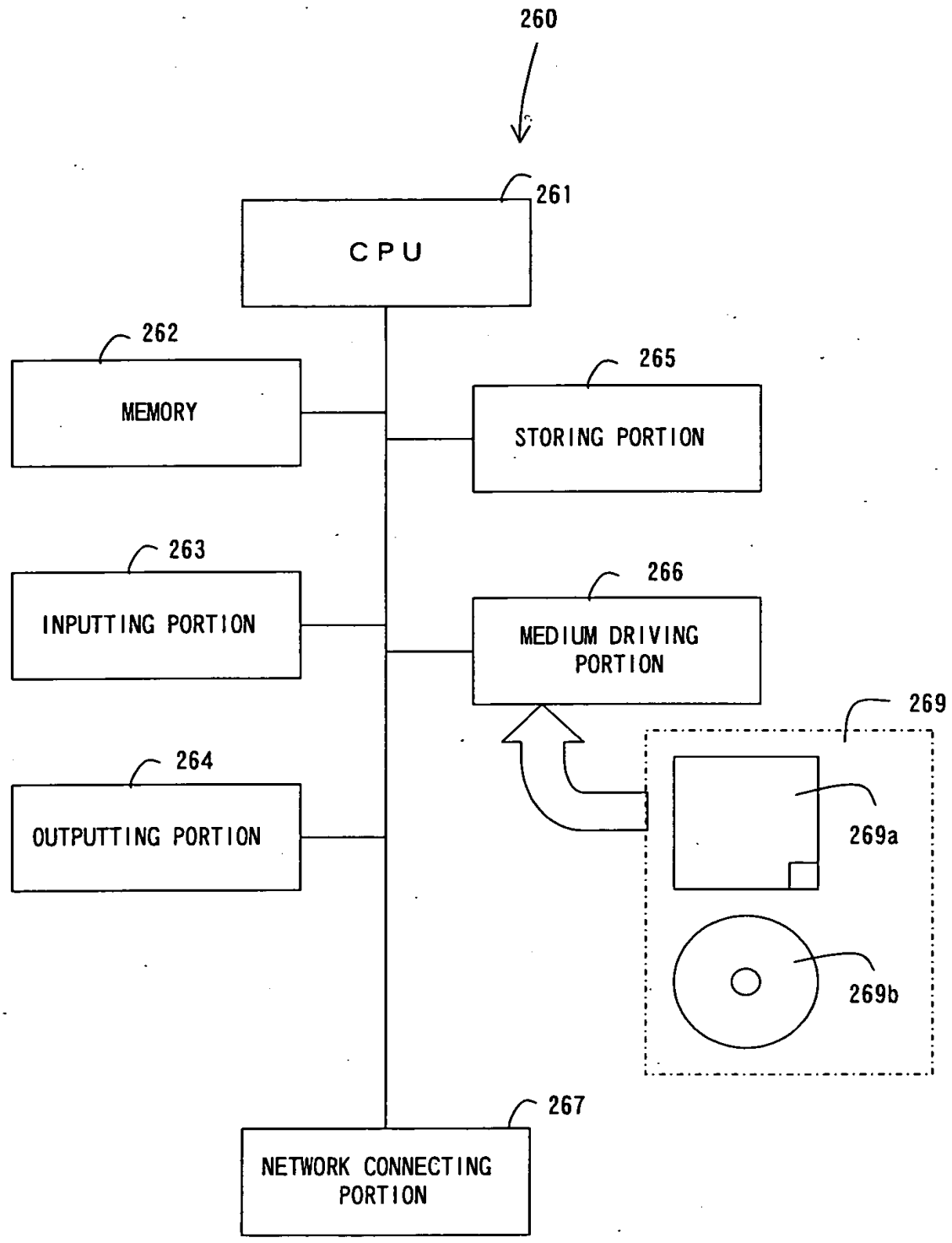
260
261
CPU
262
MEMORY
265
STORING PORTION
263
INPUTTING PORTION
266
MEDIUM DRIVING PORTION
269
269a
269b
264
OUTPUTTING PORTION
267
NETWORK CONNECTING PORTION

FIG. 49